



PRELIMINARY REPORT

AN ECONOMIC DEVELOPMENT STUDY
FOR THE
BLACKSTONE VALLEY REGION

BASED ON
AN ECONOMIC BASE STUDY
AND
AN ECONOMIC DEVELOPMENT SURVEY

BY

COMMONWEALTH OF MASSACHUSETTS
THE DEPARTMENT OF COMMERCE AND DEVELOPMENT

CARROLL P. SHEEHAN, COMMISSIONER

K. HEINZ MUEHLMANN
ROBERT KENNEY
RENA KOTTCAMP

DECEMBER 1971

TABLE OF CONTENTS

I. INTRODUCTION

Defining the Role of the Commission
Recommendations

II. SURVEY AND STUDY FINDINGS

Survey Findings
Study Findings

I. INTRODUCTION

In June of this year the Department of Commerce and Development conducted a survey of businesses, government officials and other concerned persons in the Blackstone Valley. The core of the survey consisted of interviews with twenty-five manufacturing firms, which together accounted for about 94 percent of all manufacturing employment in the Valley in 1969. In addition, a large number of wholesale and retail sales establishments were contacted, and their responses gathered concerning the economic situation in the Valley. Government officials included selectmen, state representatives, county planners, school officials and other town representatives.

Subsequently, a legislative commission was formed "for the purpose of making an investigation and study of the economic conditions of the communities located in the Blackstone Valley area...." Represented on the Commission are the eight towns of Blackstone, Douglas, Hopedale, Mendon, Millville, Northbridge, Sutton and Uxbridge. The purpose of the present study is to assist the Commission's investigation of the area in the following four ways:

- 1) by providing certain basic statistical information on employment, population, income, and other economic variables
- 2) by giving a summary description of economic factors such as transportation facilities, recreation facilities, education, tax rates, zoning and land use,

public services, pollution problems,
labor unions, and community attitudes

- 3) by discussion the economic advantages and disadvantages of the Valley from the point of view of industrial development planning, and
- 4) by providing an initial focus for the commission's investigation of economic conditions in the Valley and indicating those areas which need further study.

Some of the information on which this study is based is contained in the field survey conducted by the Department of Commerce and Development. The remainder was gathered from a variety of sources and publications, the most important of which are the 1970 Census of Population and Housing and the employment data of the Division of Employment Security.

Defining the role of the Commission

An anonymous writer once defined a committee as a group of men who keep minutes and waste hours. This is never more true than in the case of a committee which fails at the outset to decide exactly what its role should be. The first meeting of the Blackstone Valley Commission showed that there is no clear understanding among the participants as to the purpose to be served by the commission; and until this and other procedural problems are solved, it is pointless to deal with the matters of substance contained in the Department's draft report.

At first glance it might appear that a commission with no staff, no funds, and no means of carrying out its programs can achieve only a very limited purpose. However true this may be in general, it is not true in the case of the Blackstone Valley Commission. This commission has at least three valuable assets which will enable it to have an important influence on economic development in the Valley. First, the commission can draw on the considerable store of expertise which exists in its membership concerning Valley affairs, and on the data and analysis which is forthcoming from the Department. There will be some questions which will remain unanswered, some answers that may later prove wrong, no matter how long the commission works on the problem. These are inevitable results of the complexity of the problem and the scarcity of the data. But each time the commission meets and exchanges ideas its collective knowledge about the Valley's



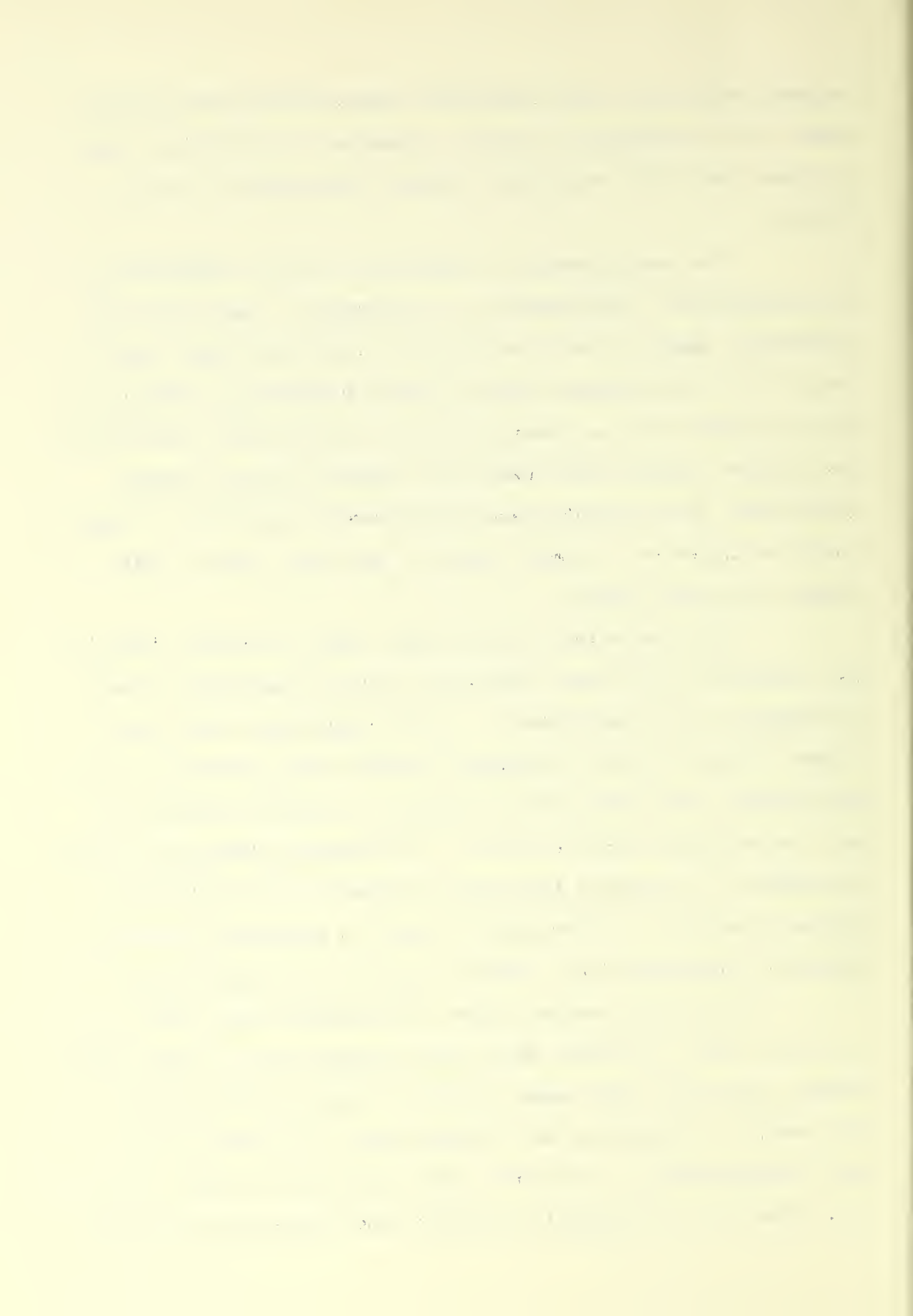
Digitized by the Internet Archive
in 2014

economy will grow, until eventually that accumulated knowledge takes on an authority of its own, capable of influencing those who make decisions concerning economic development in the Valley.

The second source of authority for the commission is the geographical distribution of its members. When and if the commission speaks it will be known by those who listen that it speaks with the combined voice of eight neighboring communities; that it speaks for the interest of all, and not just one or two. Northbridge cannot advise Uxbridge; Uxbridge cannot counsel Blackstone, but reasonable and knowledgeable residents of these towns can agree on a common interest, and when they do their views will carry weight.

The commission's third asset lies in the fact that it was created by the state legislature, and is comprised in part of members of the legislature. If the commission were a concerned citizen's group, organized without the imprimatur of the legislature, its advice would doubtless be worth listening to, but its authority would be less. A collateral advantage to this arrangement is that the legislative members of the commission working together or individually, are in a position to act as powerful advocates of the Valley's cause at the State House.

The first problem which the commission must face is to find a role for itself which makes maximum use of these three assets, but which also takes account of existing limitations. For example, preparation of a "Master Plan" on a level of detail corresponding to that of a town plan would be both beyond the commission's resources to achieve and beyond its authority



to implement. On the other hand, for the commission to issue a one-shot set of broad "recommendations" and then wash its hands of the matter would constitute a failure to utilize the capacity of the commission to influence the decisions of local officials on specific problems.

Accordingly, it is suggested that the role of the commission be to study and discuss particular issues which touch upon economic development in the Valley, and issue policy statements on these issues with the purpose of achieving results favorable to the Valley as a whole. This means that the commission would have to be a continuing body. It means that its members would in some sense have to be representatives of their communities, not just residents. It means that the commission would at times be involved in controversy. But it also means that the towns in the Valley would at last be speaking with one voice on specific and relevant issues of common concern.

If this role is accepted, the use to be made of the Department's report becomes clear. The report should not be used as a "blueprint", as some have called it, for it is not a master plan. It should not be used as a basis, without more, for recommendations by the commission. Rather, it should be considered a statistical abstract of the factors which influence economic growth in the Valley, and as a framework of analysis, supplemented by the analysis of commission members, for arriving at the commission's own recommendations.

The first substantive step which should be taken by the commission is a discussion of some of the broader questions

of economic policy for the area. Some examples of such questions are:

- 1) Should the future of the Valley lie in residential development, or should attempts be made to bring industry in and preserve existing industry?
- 2) Should tourism be encouraged in the Valley?
- 3) How is the conflict between ecology and industrial development to be resolved?
- 4) What role should the expanded route 146 plan in the development of the Valley?
- 5) Should the region remain in present form of 8 communities?

These are questions which must be resolved and agreed upon before any further steps can be taken. They are questions which it is impossible for non-residents of the Valley to answer; the commission itself must reach conclusions based on what its members see as desirable goals for the Valley to achieve.

Once these questions are at least tentatively answered, the commission can begin the work of economic analysis based on its own experience and on the data supplied by the Department. However, it should be obvious that this detailed work cannot be effectively accomplished by a large committee. It is an all-too-familiar rule that where everyone is responsible for a subject, no one is responsible. Therefore, it is suggested that the commission be divided into sub-committees, each responsible for a particular aspect of the problems outlined in the Department's

7

report. The specific analysis of individual problems by each sub-committee will hopefully stimulate useful discussion of these problems to a greater extent than if the problems were discussed without the background of a sub-committee report.

Recommendations

From the above definition of the role of the commission it becomes apparent that a list of specific recommendations by the Department of Commerce and Development to solve the Valley's overwhelming problems would be both inappropriate and immature at this time. In the first place some of the major problem areas such as pollution, education, housing, etc. lie outside the function of the Department of Commerce and Development and should be discussed with the proper agencies, and, secondly, all of the major problems have definite local peculiarities which only residents of the area can properly appraise. During the period of investigation, many ideas and recommendations for proper solution of local problems have surfaced, all of which will be made available in the context of the following recommendations for a structural setup of the commission on the next page.

Proposed Structure of the Blackstone Valley Commission

Committee

Functional Area

1. Steering Committee

- A. Overall coordinating responsibility
- B. Regionalization
- C. Funding (state and federal sources)
- D. Legislation

Composed of area legislators and chairmen of the following sub-committees:

2. Committee for industry

- A. Pollution
- B. Preservation of existing industries
- C. Industrial parks
Expansion of industrial base
- D. IDC - regional IDC
- E. Promotion
- F. State and federal assistance

3. Committee for community problems

- A. Education
- B. Sewerage - Pollution
- C. Public Transportation
- D. Master Plans - Zoning
- E. Highways
- F. Housing
- G. Water

4. Committee for business development

- H. State and federal funding
- A. Commercial Centers
- B. Tourism - State parks
- C. Revitalization of downtown areas
- D. Promotion

II. SURVEY AND STUDY FINDINGS

Survey Findings

The survey of the 8 Blackstone Valley towns revealed a great number of commonly held views and concerns about presently prevailing conditions and a general apprehension concerning future developments of the entire Blackstone region. While a great majority of the surveyed population transmitted the general notion of pessimism, despair, and negativism, there could also be detected a feeling of hope and enthusiasm among some of the concerned residents of the Valley.

Some of the most frequently mentioned adverse factors in the Valley were three most important ingredients of success.

- lack of leadership
- poor attitude among residents and
- lack of coordinated efforts.

By showing that leadership does exist the commission could accomplish to create both of the other ingredients necessary for success -- an improved, positive attitude among the Valley's residents and a greater coordination of mutually beneficial efforts. While the overpowering problems in some areas cannot be resolved without outside assistance (which in most areas does exist) the most significant attributes for success in the economic struggle in the Blackstone Valley will undoubtedly be the restoration of a sense of direction, a broader understanding of the problems by the people, and a mentality which no longer will frustrate coordinated efforts toward a common goal. In the

following the most important findings of the survey will be presented. As can be expected the broad range of urgent problems in the area makes it difficult if not impossible to arrive at a consensus of priorities.

Area-wide problems and concerns

Several approaches may be utilized when considering the economic development of the Blackstone Valley region. Those issues affecting the entire region may be separated from those problems more local in nature. Also, any future economic development should be viewed in terms of the present economic status of the area with special consideration given to historical evidence.

- The possible departure and closing of many major manufacturing concerns.
- Recent unemployment rates for the area exceeded both the state and national unemployment rates.
- A general inaccessibility resulting from poor access to the interstates, the Massachusetts Turnpike, and other major highways.
- At best, the railroad provides poor freight service. Many prospective industries considering sites in the Valley await a court decision involving the Worcester-Providence Railroad suit against the Penn Central.
- Federal and state pollution agencies demand an end to years of indiscriminate, unchecked pollution of the Blackstone River and its tributaries

resulting from industrial effluents as well as individual and community sewer discharge.

- A general lack of leadership capable of coordinating and instituting comprehensive planning measures.
- The scarcity of adequate and zoned industrial land.
- Competition as opposed to cooperation characterizes interaction between the communities. The defeat of the proposed Douglas-Sutton Regional School District typifies this attitude.
- A need to expand and diversify the present economy.
- The lack of either a public or private organization whose existence would plan and promote the economic development of the Blackstone Valley region.

Community Issues and Problems

Many of the eight communities experience similar problems. And yet, the individuality and nature of the problem has resulted in local consideration.

- Public education deficiencies vary according to the community. One community experienced difficulty acquiring accreditation. Other communities suffer from overcrowded facilities and outdated education practices.
- Sewerage and water facilities are prime issues in many of the communities. Millville and Mendon are

without public water facilities. And the existing water facilities of many of the communities are scheduled for improvement and further extension.

- Difficulty has arisen in the establishing of sanitary landfills.
- The relation between local tax rates and economic development.
- A need to revitalize the central business districts.
- Northbridge, Sutton, and Uxbridge are the only communities with housing authorities. Housing problems vary with the community.

Questionnaire Responses

The apparent multitude of concerns in the area have produced a great variety of responses. These responses are given below in order to demonstrate to the Commission the great range of concerns and suggested actions which the surveyed population expressed.

Wholesale/Retail Questionnaire

What do you think the merchants can do to improve business?

- Establish a coordinated effort.
- Promote towns through the newspapers and radio.
- Renew or paint stores in central shopping districts.
- Bring in new industry.
- Place signs on major roads showing locations of business centers.

What do you think the town can do to improve the economic base?

- Nothing - too much politics.
- More off-street parking in business districts.
- Bring in some good industry, and better roads into town from the main highway.
- Lower taxes.
- Improve town water and sewerage.
- Have town officials sit down with merchants and talk over problems.

What priority to you place on the following? (order of priority)

1. Industrial parks
2. Sewerage
3. Transportation - highways
4. Central business district
5. Schools
6. Housing
7. Recreational facilities

Also mentioned.

- Public parking facilities
- Housing for the elderly
- Lower taxes

Manufacturing Questionnaire

If community has vocational school, does your company benefit?

Some companies feel that the vocational school has been a real asset to the entire area and have hired some of its graduates. Other companies say that it has been of no benefit to them. One company fought for courses in the textile industry but was unsuccessfully.

Do you feel there is a need for an industrial park?

Many companies had no comment to make. Some felt that an industrial park would be an asset to the entire area, and that it was definitely needed for the survival of the community. One company felt it might reduce the tax rate. Several companies felt there was no need for an industrial park especially if it meant competition for them. One company said they were having trouble renting their own space. Industrially zoned land is limited in quantity and quality and some companies do not feel that demand for land has been evidenced to provide a park.

Have you any suggestions on how this community can improve its industrial climate?

Provide decent land for industry.
Improve railroad service, both freight and passenger.
Route 146 needs improvement.
Better highway access.
More leadership needed - people don't work together.
Better cooperation from town officials.
Need additional industry.
To be able to get help when needed - no cooperation from Division of Employment Security.
Town should provide better facilities for solid wastes (dump).
Better water system.
Should have a Chamber of Commerce where applicable.
Sewer disposal plant needed.
Need Master Plan for those towns who have never produced one, and up-dated versions for those that have.
More efforts towards promoting the area.

Other Remarks:

Survey would have merit if the end result would be a close relationship with industries and communities on a regional basis.
Concern over possible phaseout of manufacturing facilities within the valley.
Old Hartford Turnpike should be completed in order to provide better access to Interstate Route 495.
Problem of communities becoming bedroom towns for people who work in Rhode Island or Worcester area.

LOCAL GOVERNMENT, SCHOOLS, TRANSPORTATION, BANKS, DES, IDC, C OF C.

What do you think are the local problems as pertaining to the economy in general?

Need schools - can't afford them.
 We need a complete buildup in the people's spirit to go ahead - towns in general are run down.
 Need to diversify industry - towns limited to textile and textile related industries.
 Poor paying jobs in local area. When mills went out problems began as pertaining to economic base. Allowed residential development on Route 146 instead of parlaying it into revenue producing via commercial and industrial enterprises.
 I.D.C. needs help.
 Publicize the area.
 Provide more roads East and West, North and South.
 Cut out all but one main Post Office, in order to unify all the small localities (Rockdale, Whitinsville, etc.)
 Downtown area has lost its appeal due to shopping centers and metropolitan shopping activity.
 Through urban renewal, improve the central business districts.
 Update the master plans where applicable.
 Land zoning needed.
 More State aid.
 Unemployment.
 Pollution abatement.
 Need for a coordination with town officials and businessmen.
 Bedroom town for Woonsocket, R.I.
 No industrial parks being promoted. Need sewerage - water.

What should the community or the area be doing to better their economic base?

Get new industries.
 Revitalize I.D.C.
 Expand water and sewerage facilities.
 Get more state aid.
 Need access to Mass. Pike and Route 495.
 Better roads and transportation.
 Lower taxes.

Industrial Park.

Pollution abatement.

Other Remarks

Professionals out of work should be prime concern.

LOCAL GOVERNMENT, SCHOOLS, TRANS., ETC. - Cont.

Schools.

Good potential for labor market.

Tax structure needs relief.

More and continued assistance from various state agencies.

Must stop pollution of Blackstone River.

Airport - light craft.

Solid waste - may become problem.

Good water supply needed.

Improve sanitary land fill.

Study Findings

Economic Conditions

Unemployment

- 1600 unemployed in Valley in June 1971, or
 - * 4 percent of the population
 - * 6 percent of the population over age 16
 - * 10 percent of the civilian labor force
 - * 16 percent of the civilian work force
 - * 18 percent of total employment
- recent increase in unemployment partially attributable to state and national economic trends
- long-term problem is largely independent of state and national trends, the area will continue to have a serious unemployment problem even in the face of a general national economic recovery
- high unemployment relative to the state has appeared within the last decade
- other problems of unemployment exist
 - * age distribution
 - * male - female distribution
 - * underemployment

Employment Opportunities

- employment opportunities in the Valley have been declining for years, particularly in manufacturing industries
- 37 percent decrease in manufacturing employment between 1965 and 1969
- much of the decline occurred through reduction in average size of firms
- non-manufacturing job opportunities have generally expanded, but have remained stagnant since 1966

- in order for the unemployment problem to be solved internally, employment opportunities would have to increase by at least 12 percent

Commuting Pattern

- level of out-commuting from the Valley is quite high; net out-commuting in 1969 was about 40 percent
- Blackstone and Sutton have the highest out-commuting
- economic condition of a town does not depend on its level of out-commuting, but on the jobs to which its residents commute

Income Level

- high percentage of manufacturing employment has tended to raise Valley income
- high participation rate (more people working) has also tended to increase per capita income
- in spite of the above, median income in the Valley is 6 percent below the state average
- low median income is partly explained by low wage payments of non-manufacturing employees

Population Growth

- the Blackstone Valley had a higher rate of population growth over the period 1960 - 1970 than either the state or Worcester County (percent increases: Blackstone Valley 13.8 percent, Worcester County 9.2 percent, Massachusetts 10.5 percent). This is due to the substantial in-migration.

- net in-migration is the result of
 - * high out-migration of young single people
 - * high in-migration of young married couples with children
- migration pattern may have a tendency to decrease pool of available labor.

Population and Labor Force

Population

- 1970 Valley population was 42,731
- average population density 276 persons per square mile
- age structure of population roughly similar to that of the state, although there are variations among the towns
- percentage of "productive population" (ages 25-64) was 43.8 percent in 1970, compared to 47.6 percent in 1960
- by 1980 the "productive portion" will be even smaller

Participation Rate

- at present participation rate of labor in the Valley is higher than the state rate
- in 1960 the higher rate was explained by a relatively high male participation rate; variations among towns were explained by differences in female rate
- female participation rate lowest in towns with large 1960-70 in-migration

Labor Force

- 1980 labor force will be around 19,200 compared to 17,900 in 1970
 - * if employment opportunity does not increase, employment as a percent of the labor force will fall from 60 percent to 56 percent

- * in order to keep the ratio at 60 percent, jobs will have to increase by 7 percent, to about 11,500 over the decade
- * to increase the ratio to 70 percent, jobs will have to increase by 25 percent
- educational facilities in the Valley are inadequate
- percent of high school graduates who go on to college is low

Existing Industry

- traditional employers in Blackstone Valley have reduced their labor requirements in recent years
- but, nevertheless these employers continue to dominate the area economy
- four industrial complexes
 - * textiles in Douglas
 - * textiles in Uxbridge
 - * machinery in Northbridge
 - * machinery in Hopedale
- four complexes accounted for
 - * 92 percent of manufacturing employment in 1960
 - * 83 percent of manufacturing employment in 1969
- large firms decreased employment by 44 percent between 1960 and 1969
- small firms have shown moderate growth
- future growth depends on
 - * improvements in transportation
 - * resolution of pollution problems

Transportation

- Valley suffers from a lack of efficient connecting transportation routes
- Route 146 clearly the most important transportation route; improvement crucial

- Route 122 is inefficient because it passes through congested areas
- original purpose of Route 16 preempted by Massachusetts Turnpike; road largely local at present except near Milford 495 interchange
- completion of Route 52 important to the Valley
- local transportation adequate at present if regional traffic is taken care of
- improvement of rail service crucial
- improvement of other public transportation also essential

Pollution Problems

- water pollution problems are very serious in the Valley
- DWPC has had great difficulty enforcing pollution standards in the area
- no favorable prospect for the Valley which does not depend on cleaning up the river

Recreation and Tourism

- few major attractions exist at present
- most attractions are not the type which attract overnight visitors
- a major tourist attraction in the Valley would involve significant costs
 - * traffic congestion
 - * use of land
 - * unstable source of employment
 - * risk of unsightly collateral development

- proposed Rice City Pond Park is the best available opportunity for development of a beneficial tourist trade

- * conservation of land
- * encourages development of mill sites
- * provides recreation for residents
- * brings in some outside income

PRELIMINARY REPORT

PART II

AN ECONOMIC DEVELOPMENT STUDY
FOR THE
BLACKSTONE VALLEY REGION

BASED ON

AN ECONOMIC BASE STUDY
AND
AN ECONOMIC DEVELOPMENT SURVEY

BY

COMMONWEALTH OF MASSACHUSETTS
THE DEPARTMENT OF COMMERCE AND DEVELOPMENT

CARROLL P. SHEEHAN, COMMISSIONER

K. HEINZ MUEHLMANN
ROBERT KENNEY
RENA KOTTCAMP

DECEMBER 1971

YARD - 10' 10" : 10' 00" 0"

• • •

[illegible]

TABLE OF CONTENTS

	<u>Page</u>
III Economic conditions	1
IV Area potential	36
V Population and labor force	39
VI Existing industry	61
VIII Transportation potential	67
X Pollution problem	71
XI Recreation and tourism	88
Appendix	

III. PRESENT ECONOMIC CONDITIONS

Employment opportunity is the key to the economic development of a region. Unless the members of the labor force are provided with jobs which fit their particular skills and which are reasonably close to their places of residence, the region will tend to have (1) unemployment and underemployment of workers, (2) a high level of out-commuting, (3) low incomes, and (4) out-migration among the productive age-groups. These conditions are more than just indicators of the region's development problem; in a very real sense they are the problem, and the success of the area development effort can only be measured by the extent to which these conditions are improved.

This section of the report will describe the economic character of the Blackstone Valley area with particular emphasis on these four conditions. In addition, consideration will be given to the conditions in outlying areas which affect the Blackstone Valley towns. Because of the high level of interaction with these areas, it would be meaningless to study the Blackstone Valley in isolation, without some discussion of the effect of neighboring economic centers. Finally, this section will contain an outline of some of the more important "quasi-economic" conditions, such as housing and welfare, which are directly, if not exclusively tied to the economic outlook of the Blackstone Valley.

Unemployment

In June of 1971, approximately 1,600 Blackstone Valley residents were unemployed. This figure represents roughly

- 4 percent of the population
- 6 percent of the population over age 16
- 10 percent of the civilian labor force
- 16 percent of the civilian work force
- 18 percent of total employment

Unemployment is most often expressed as a percentage of the civilian labor force, which is defined as the sum of those residents who are working or actively seeking work. The reason for the widespread use of this ratio is that it is the best single indicator of the severity of unemployment in any given area. For example, two areas with equal population may have equal unemployment rates when expressed as a percentage of population, but the unemployment problem will be more severe in the area with the smaller labor force simply because each member of the labor force in that area supports, on the average, more of the population. In the example given below

	<u>A</u>	<u>B</u>
Population	1000	1000
Labor Force	500	400
Unemployment	50	50
Pop/Labor Force	2.0	2.5
Unemp/Pop	5.0%	5.0%
Unemp/Labor Force	10.0%	12.5%

TABLE 1
UNEMPLOYMENT FOR JUNE 1971

	<u>Unemp. Number</u>	<u>Civ. Labor Force*</u>	<u>Unemp. Rate</u>
Blackstone	386	2,746	14.1%
Douglas		1,291	
Hopedale	145	1,890	7.7
Mendon	65	1,074	6.1
Millville	106	726	14.6
Northbridge	491	4,916	10.0
Sutton	176	1,811	9.7
Uxbridge	259	3,669	7.1
Blackstone Valley	1,628	16,832**	9.7**
Civilian Work Force			

*Estimated

**Excluding Douglas

Prepared by Massachusetts Department of Commerce and
Development, Bureau of Area Planning

both areas have population of 1,000 and unemployment of 50, but the labor force of B is smaller. Each member of B's labor force supports an average of 2.5 members of the population, compared with 2.0 in the case of A. Thus, the unemployment problem in B affects 125 people (50 times 2.5), while in A only 100 people (50 times 2.0) are affected. This is so despite the fact that the two areas have the same unemployment in absolute terms and as a percent of population. To avoid this misleading result, economists generally express unemployment as a percentage of the civilian labor force. In the example of areas A and B, this way of expressing unemployment gives B a rate of 12.5 percent and A a rate of only 10.0 percent. The ratio of these two percentages is the same as the ratio between the number of people affected by the unemployment problem in each area. (125 divided by 100 or 1.25) However, this use of civilian labor force as a base should not be allowed to obscure the fact that the primary concern is with the adverse affect of unemployment on the entire population. Also, it should be recognized that this usual way of expressing the rate of unemployment is by no means the only way, and in some cases may not even be the best way.

From the point of view of those interested in increasing employment opportunities, for instance, it is probably more useful to select total employment in the area as the base. This method of expressing unemployment gives an indication of the extent to which employment opportunity must grow in order to eliminate unemployment, or reduce it to a given level. The

traditional expression of the unemployment rate, as a percentage of the civilian labor force, does not give this vital information. As an example, consider the regions C and D described below:

	<u>C</u>	<u>D</u>
Unemployment	50	50
Labor Force	500	500
Employment	600	300
Unemp/Labor Force	10.0%	10.0%
Unemp/Emp	8.3%	16.7%

The two areas have the same absolute unemployment and the same size labor force, so it can be said that in each area 10 percent of the labor force is unemployed. The importance of this fact is that from it we can infer that 10 percent of the population of each area is affected by the unemployment problem. The inference is not inevitable, but it is probably strong enough to be relied on for practical purposes.

However, it should be obvious that this 10 percent figure says nothing about the relative extent to which employment opportunity in each area must be increased in order to eliminate unemployment. In area C, employment is larger than the labor force because of net in-commuting. In area D, considerable net out-commuting exists. As a result basic employment opportunity in C is twice that existing in D. Therefore, since employment opportunity in each area must be increased by at least 50 jobs in order to eliminate unemployment, the necessary relative increase for D (16.7 percent) is twice the increase necessary for C (8.3 percent).

The Blackstone Valley region, with its high level of net out-commuting, is in the same general situation as the example area D. Therefore, the unemployment "rate" for the area is considerably higher when total employment is used as a base (18 percent) than when civilian labor force is used (10 percent). Both indicators are useful and important; the latter gives a measure of the severity of unemployment relative to other regions, while the former indicates the relative magnitude of the development effort necessary to insure that the area's labor force is fully employed. However, in trying to explain the reasons for the high rate of unemployment in the Blackstone Valley, it should be made plain which "rate" is being discussed. For the remainder of this section, the rate based on civilian labor force will be most often used, since it is a good indicator of economic condition, and it facilitates comparison with other areas.

The most obvious fact about unemployment in the Blackstone Valley region is that its recent dramatic increase is largely a result of state and national economic trends and conditions which are clearly beyond the control of the individual communities. Table 2 shows that between the taking of the 1970 census and June of 1971, unemployment more than doubled in Massachusetts. During the same period there was a similar relative increase in unemployment for all of the towns in the Blackstone Valley area. This indicates that the decline in the economic situation in the state has been largely responsible for the recent worsening of economic conditions in the Valley.

TABLE 2
UNEMPLOYMENT RATES, MASSACHUSETTS AND SELECTED AREAS
1970 CENSUS, 1971

	<u>1970 Census</u>	<u>June 1971</u>
Massachusetts	3.8%	8.0%
Milford	5.7	12.3
Blackstone	7.5	14.1
Northbridge	4.9	10.0
Uxbridge	4.6	7.1
United States		5.6

Source: United States Department of Commerce
Massachusetts Department of Commerce and
Development, Bureau of Area Planning

However, Table 2 also shows the second most obvious fact about unemployment in the Blackstone Valley: that the long-term problem is largely independent of state and national trends. In 1970, every one of the four Valley towns for which data is available had an unemployment rate which was significantly higher than the state rate of 3.8 percent. This indicates that even before unemployment in the state began its rapid upward climb, the Blackstone Valley was already experiencing problems of labor surplus. Thus, while an upturn in the general economy would certainly improve economic conditions in the Blackstone Valley, there is reason to believe that the area would continue to have a serious unemployment problem even in the face of such an upturn.

It would be difficult to pinpoint exactly when economic conditions in the Blackstone Valley began to decline, but the symptom of high unemployment relative to the state seems to have appeared within the last decade. Table 3 indicates that in 1960, when the state unemployment rate was 4.2 percent, the four Valley communities for which data was available all had rates below that average. Between the 1960 and 1970 censuses, the state rate fell by four-tenths of a percent, but the rates of Milford, Northbridge, and Uxbridge all increased considerably.

These comparisons of unemployment rates give a rough indication of the magnitude of the labor surplus problem in the Blackstone Valley, and of the broad trends involved. However, there are other important aspects to the problem which

TABLE 3
UNEMPLOYMENT RATE 1960 CENSUS

	<u>1960</u> <u>Unemp. Rate</u>
Massachusetts	4.2%
Hopedale*	2.0
Uxbridge*	3.6
Northbridge	3.8
Milford	3.6

*Urbanized portion of town

Source: United States Department of Commerce

should not be ignored, and would not be if the relevant data were more readily available. For example, there are wide variations in unemployment rates between male and female workers, and among various age groups. State and national data make it clear that the rate tends to be higher for females and for teenagers. The 1960 census tends to show that the male - female differential is particularly accentuated in the case of the Blackstone Valley, but no more recent data is available to confirm this fact. Lack of data likewise prevents drawing any current conclusions about the age structure of the unemployed, or about other important aspects of the problem such as the extent of "underemployment", the types of workers which tend to become unemployed, and so forth. However, much of this information will appear in subsequent counts of the 1970 census, perhaps in time to be incorporated into the final version of this report.

Employment opportunities and out-commuting

In the above discussion of the unemployment problem in the Blackstone Valley, it was concluded that the present high level of unemployment in the area is a relatively recent phenomenon related to state and national economic difficulties. The more general problem of a shortage of employment opportunity in the Valley, however, is by no means new. The 1970 unemployment rates in Table 2 show this to be true; even before the state's unemployment rate began to increase, high rates existed in the Blackstone Valley. But an even more

dramatic illustration of the point appears in the employment data for the last two decades.

Employment opportunities in the Valley have been declining for years, particularly in the area of manufacturing industry. From a 1950 level of 10,735 production and related workers, manufacturing employment has fallen more or less steadily. There was a 39 percent decrease from 1950 to 1961, a small (7 percent) increase from 1961 to 1965, and a 37 percent decrease between 1965 and 1969, when employment stood at 4,450. Throughout this twenty-year period, the number of manufacturing establishments has remained more or less constant, but the average number employed by each firm has dropped from 346 in 1950 to only 127 in 1969. This tends to support the theory that the decline in demand for industrial workers is largely explained by a reduction in the labor requirements of existing plants, rather than by the mass "exodus" of firms which has occurred in other old manufacturing centers in New England.

Non-manufacturing employment opportunities have expanded while manufacturing jobs have contracted. This follows from the fact that non-manufacturing jobs tend to grow with population and income, and are less sensitive to locational deficiencies than are manufacturing jobs. Between 1960 and 1970, population in the area increased by 13.8 percent, and the average (manufacturing) wage level increased by 34.5 percent. Non-manufacturing employment responded to these developments with a 24.4 percent increase.

TABLE 4

CENSUS OF MANUFACTURES - BLACKSTONE VALLEY

	Establishments (Within Scope of Census)	Value of Stock and Materials Used	Total Wages Paid During Year (Gross, Before Deductions)	Aug. No. Prod. and Related Workers	Value of Products F.O.B. Plant
1960	36	\$ 51,216,885	\$ 32,064,542	7,295	\$118,559,961
1961	35	51,086,061	30,052,389	6,573*	113,371,124
1962	33	59,049,635	32,463,277	6,651	118,076,958
1963	38	61,529,877	31,676,372	6,695	122,406,623
1964	38	71,520,099*	34,240,669	6,635	140,368,981
1965	38	79,964,239	39,093,624	7,038	159,562,065
1966	35	77,598,660	37,876,290	6,443	157,654,680
1967	35	56,026,821	30,464,637	5,267	109,680,455
1968	37	52,477,380	27,119,247	4,571	102,651,140
1969	35	51,961,211	26,302,304	4,450	102,695,409
% Change	-2.8	+1.5	-18.0	-29.0	-13.4

* Revised

Source: Massachusetts Department of Labor and Industries

TABLE 5

COVERED EMPLOYMENT

TOTAL EMPLOYMENT, NON-MANUFACTURING EMPLOYMENT,

MANUFACTURING EMPLOYMENT, BLACKSTONE VALLEY 1960 - 1969

<u>Year</u>	<u>Total Emp.</u>	<u>Non-Mfg. Emp.</u>	<u>Mfg. Emp.</u>	<u>Mfg. % of Total</u>
1960	10,999	1,832	9,167	83.3%
1961	9,996	1,743	8,253	82.6
1962	10,180	1,760	8,420	82.7
1963	10,442	1,930	8,512	81.5
1964	10,588	2,029	8,559	80.8
1965	11,274	2,091	9,183	81.5
1966	10,676	2,260	8,416	78.8
1967	9,442	2,299	7,143	75.7
1968	8,375	2,395	5,980	71.4
1969	8,017	2,279	5,738	71.6
1970	7,966	2,654	5,312	66.7

Source: Massachusetts Division of Employment Security

TABLE 6

BLACKSTONE VALLEY COVERED EMPLOYMENT 1966 - 1970

<u>Industry</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Agriculture & Construction	246	242	228		282
Manufacturing	8,416	7,143	5,980		5,312
Trans., Comm. & Utilities	355	356	355		389
Wholesale & Retail Trade	1,022	1,049	1,122		1,133
Finance, Ins. & Real Estate	124	120	128		147
Services & Mining	513	532	562		703
Total	10,676	9,482	8,375		7,966

TABLE 6

BLACKSTONE VALLEY COVERED EMPLOYMENT 1960 - 1965

<u>Industry</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Agriculture & Construction	235	225	230	240	235	238
Manufacturing	9,167	8,253	8,420	8,512	8,559	9,183
Trans., Comm., & Utilities	151	152	167	179	209	218
Wholesale & Retail Trade	889	893	873	974	981	1,002
Finance, Ins. & Real Estate	93	105	106	117	118	120
Services & Mining	337	368	384	420	486	513
Total	10,872	9,996	10,180	10,442	10,588	11,274

However, the increase in covered non-manufacturing employment has been practically nil since 1966, and as a result the most recent trends in total employment have largely been a reflection of trends in manufacturing employment. (See Chart 1).

Another way of expressing the problem of employment opportunity discussed in the previous section, is to relate the number of unemployed workers living in the area to the total employment in the area. In the case of the Blackstone Valley region, unemployment is approximately 18 percent of total estimated employment in the area. This means that in order for the unemployment problem to be solved internally, employment opportunities in the region would have to increase by at least 12 percent. This demonstrates the magnitude of the development effort which confronts the region. For the state as a whole, full employment could be achieved by increasing employment opportunities by only about 3 or 4 percent, and yet even this modest increase seems impossible to achieve by development efforts.

One of the natural results of a decline in employment opportunity in a region is out-commuting. If area residents are capable of commuting to jobs outside of the area, much of the hardship of a decline in local labor demand will be alleviated. Where the region is small, where transportation is good, and where neighboring areas contain sufficient employment opportunity, out-commuting may provide a permanent

answer to the region's own economic problems. However, an area which relies on its neighbors to provide its residents with employment and income has obviously abdicated direct control over the economic well-being of its population. If economic conditions in the neighboring areas become depressed, the region will see its own residents begin to lose jobs, but will be helpless to exercise control over the conditions which actually caused the loss of jobs. To a large extent the Blackstone Valley region has already experienced this problem. Although data on commuting patterns is scarce, there is some indication that considerable commuting occurs both between area towns and outside of the area.

The questionnaire circulated to Valley manufacturing firms by the Department of Commerce and Development in June of this year contained a section on residence of each firm's workers. The responses indicate that about 40 percent of all workers employed by Valley manufacturing firms are residents of the town in which the plant is located. This figure is considerably higher in the case of Northbridge and Uxbridge. Northbridge workers, in fact, are so closely tied to in-town firms that in 1960 Northbridge had one of the highest percentages in the county of workers who walked to their jobs (21 percent). Although the Department of Commerce and Development questionnaire did not ask the percentage of employees who are residents of one of the eight Blackstone Valley towns, it is quite possible that this figure is in the neighborhood of 70 - 75 percent.

TABLE 7

1969 OUT-COMMUTING - BLACKSTONE VALLEY

<u>Town or Area</u>	<u>Est. Emp.</u>	<u>Labor Force</u>	<u>Net Out- Commuting</u>	<u>Percent of Labor Force</u>
Blackstone	309	2,682	2,373	.88%
Douglas	767	1,272	505	.40
Hopedale	3,683	1,877	-1,806	.49*
Mendon	369	1,083	714	.66
Millville	326	717	391	.55
Northbridge	3,156	4,872	1,716	.35
Sutton	480	1,770	1,290	.73
Uxbridge	1,691	3,647	1,956	.54
Blackstone Valley				
Total	10,781	17,920	7,139	.40

* Percent of employment

This indicates that, with the exception of the Draper Corporation in Hopedale, only a small percentage of workers employed by Valley manufacturing firms are commuters from outside the Valley. However, because of the small number of available jobs relative to the supply of resident labor, the level of commuting from the Valley is quite high.

Table 7 shows that in 1969 there was net out-commuting from the Valley amounting to about 40 percent of the area's labor force. This means that at least two out of every five resident workers find employment outside of the Valley. Even this high figure represents only net out-commuting; since there is also some in-commuting, the absolute figure for total out-commuting is still higher. There is considerable variation among the eight towns with respect to commuting tendencies. In the case of Hopedale, for example, approximately half of the town's employment is accounted for by net in-commuting. Blackstone and Sutton have the highest net out-commuting, with 88 percent and 73 percent respectively. These figures support the general impression that these two towns are largely "bed-room communities" with most residents working in neighboring towns. To a large extent, whether or not a high degree of out-commuting from a particular region is acceptable depends on the economic stability and growth prospects of those areas to which workers commute. If these areas show adequate growth without major cyclical or seasonal disturbances, then it is likely that the pattern of out-commuting will be harmful, and may even be the most efficient solution in the long run. On the

TABLE 8

RANK CORRELATION BETWEEN OUT-COMMUTING AND UNEMPLOYMENT

	<u>C.L.F.*</u> <u>Unemp. Rate</u>	<u>Rank</u>	<u>1969</u> <u>Out-Commuting</u>	<u>Rank</u>
Blackstone	14.1	2	.88	1
Dogulas			.40	
Hopedale	7.7	5	(.49)**	7
Mendon	6.1	7	.66	3
Millville	14.6	1	.55	4
Northbridge	10.0	3	.35	6
Sutton	9.7	4	.73	2
Uxbridge	7.1	6	.54	5

R = .214

*Civilian Labor Force

**In-Commuting

Prepared by Massachusetts Department of Commerce and
Development, Bureau of Area Planning

other hand, if these areas themselves have high unemployment rates, if their growth prospects are poor, or if their demand for workers is unstable, then any region which depends on them for jobs and income will inevitably suffer economic hardship.

Table 8 shows that there is no general relationship in the Valley between towns with a high rate of out-commuting and towns with a high rate of unemployment. So far as is indicated by the unemployment rate, the economic condition of a town cannot be said to depend strongly on the extent of out-commuting. Millville, with a very high unemployment rate, has only moderate out-commuting. Uxbridge, with roughly the same rate of out-commuting, has a relatively low unemployment rate. Although there is no current data available on the destinations of Blackstone Valley commuters, a 1960 study performed by the Department of Commerce and Development gives a rough indication of the pattern for some of the Valley towns. (See Table 8).

Income and wages

In the past, the single most important determinant of income in the Blackstone Valley has always been the wages paid by manufacturing firms. As late as 1960, 84 percent of all covered employment in the Valley was in manufacturing. That percentage has declined steadily over the last decade so that today the manufacturing share stands at about 65 percent, but that figure is still high compared to the state percentage of 37 percent and the national percentage of ^{26.6}29 percent. From the standpoint of income, this heavy reliance on manufacturing has been beneficial in several aspects.

1) Higher average wage than non-manufacturing

First, manufacturing firms generally have a higher average wage payment than non-manufacturing firms. For the state as a whole this differential is about 19 percent; for the Blackstone Valley the differential is even more pronounced (39 percent). Therefore, the higher the proportion of manufacturing jobs, the higher the total income earned in the area.

2) Higher average wage than state manufacturing

Manufacturing firms in the Valley not only have higher average wage payments than local non-manufacturing employers, but the data also indicates that these firms have tended to pay higher wages than the average for manufacturing in the state. This does not necessarily mean that higher wages are paid than in comparable industries elsewhere; rather, the difference appears to be the result of a heavy concentration of fairly high-wage industries. In recent years, however, this differential has disappeared, so that in 1969 the average Valley manufacturing wage was only 97 percent of the state average.

3) Higher participation rate

There is evidence that the participation rate of labor in the Blackstone Valley is higher than elsewhere in the state, so that a greater proportion of the population is earning income. This factor, which tends to increase

TABLE 9
AVERAGE MANUFACTURING WAGE

<u>Year</u>	<u>Mass.</u>	<u>Blackstone Valley</u>	<u>Ratio</u>
1960	\$4,180	\$ 4,395	105.1%
1961	4,324	4,572	105.7
1962	4,471	4,881	109.2
1963	4,591	4,731	103.0
1964	4,785	5,161	107.9
1965	4,976	5,555	111.6
1966	5,231	5,879	112.4
1967	5,443	5,784	106.3
1968	5,715	5,933	103.8
1969	6,094	5,911	97.3

Source: Massachusetts Bureau of Labor and Industries

per capita incomes in the area, seems to be partly the result of a heavy use of female workers on the part of Valley manufacturing firms. Responses to the questionnaire circulated among area firms by the Department of Commerce and Development in June of this year indicate that about percent of all manufacturing workers in the Valley are female. This compared with the national average of 7 percent. Despite the clearly beneficial effects on area income of a high proportion of manufacturing jobs, median income in the Valley has remained relatively low. In 1960, it is estimated that the median income of Valley residents was about 6 percent below the state average. Of the six towns within the Valley for which income data is available, only Hopedale had a median income higher than that of the state.

The main reason for this low average level of income is the low average non-manufacturing wage. The average non-manufacturing wage in the Valley is 23 percent lower than the state non-manufacturing average and this differential has a depressing effect on the income level despite the fact that there is a relatively small proportion of non-manufacturing employees in the area.

Quasi-economic conditions

In every community there exist conditions which, although they do not generally come under the heading of "economic conditions", nevertheless reflect at least indirectly the overall wealth and income level of the community. Like most social

BLACKSTONE VALLEY

MEDIAN INCOME

1960 CENSUS

	<u>Median Income</u>	<u>% of Mass.</u>
Massachusetts	\$ 6,272	100.0%
Worcester County	5,977	95.3
Blackstone Valley (estimated)	5,868	93.6
Blackstone	5,671	90.4
*Hopedale	6,388	101.8
Millville	5,214	83.1
Northbridge	5,942	94.7
Sutton	5,828	92.9
*Uxbridge	5,836	93.0

* Urbanized portion of town.

Source: U. S. Department of Commerce
Massachusetts Department of Commerce and
Development

conditions, these are partly economic in character, insofar as they respond to changes in people's national well-being. Therefore, most community development programs include among their broad economic goals the solution of such problems as housing shortages and a high level of welfare recipients, and measure their success partly by how completely these problems are solved. (The final report will contain a description of the housing situation in the Blackstone Valley, and a description of the status of welfare payments.)

Population growth and migration

Between 1960 and 1970, population growth in the Blackstone Valley exceeded that of Worcester County and of Massachusetts (See Table 10). Massachusetts' population during the period grew by 10.5 percent, while Worcester County grew by 9.2 percent, and the Blackstone Valley grew by 13.8 percent. Most of the difference between the state's rate and that of the Valley is experienced by a higher rate of migration into the Valley than into the state generally. During this period the Valley's population increased by 4.1 percent because of net in-migration, while migration into Massachusetts amounted to only 1.5 percent of 1960 population.

These figures indicate a reversal of the usual trends in communities suffering large declines in employment among basic industries, such as manufacturing. As a general rule, people are not attracted to areas from which industrial jobs are disappearing at a rapid rate. The figures also indicate

POPULATION AND MIGRATION, 1960 - 1970,

BLACKSTONE VALLEY, WORCESTER COUNTY, MASSACHUSETTS

<u>Area</u>	<u>Population</u>		<u>Change 1960-70</u>	<u>Net In or Out Migration</u>	<u>Net Migration as % of Population</u>	
	<u>1970</u>	<u>1960</u>			<u>1970</u>	<u>1960</u>
Blackstone	6,566	5,130	1,436	621	9.5%	12.1%
Douglas	2,947	2,559	388	144	4.9	5.6
Hopedale	4,292	3,987	305	165	3.8	4.1
Mendon	2,524	2,068	456	267	10.6	12.9
Millville	1,764	1,567	197	94	5.3	6.0
Northbridge	11,795	10,800	995	- 66	- .6	- .6
Sutton	4,590	3,638	952	547	11.9	15.0
Uxbridge	8,253	7,789	464	- 229	- 2.8	- 2.9
Blackstone Valley	42,731	37,538	5,193	1,543	3.6	4.1
Worcester County	637,079	583,228	53,851	5,273	.8	.9
Massachusetts	5,689,170	5,149,834	539,336	78,815	1.4	1.5

Source: U.S. Department of Commerce, Bureau of the Census
Massachusetts Department of Commerce and Development

a reversal of the 1950 - 60 trend for the Valley itself. During that period, net out-migration was substantial (See Table 11). In order to explain the apparent deviation of the Blackstone Valley towns from the normal pattern, it is necessary to discuss in more detail the theory of population migration.

Several studies have shown that it is too much of a simplification to speak of jobs, income and wage rates as if they were the sole factors influencing people to move from one location to another. Specifically, it seems that those who move short distances, within a particular region, almost never do so because of a job transfer, a new job, or other job-related reasons. Instead, over half of these people move to find better housing. By contrast, those who move longer distances, from one region to another, are much more likely to have done so in order to take or look for a new job, or because of a job transfer. Since it can be safely assumed that it is not employment opportunity which is drawing people into the Valley, the answer must be that people are in-migrating from neighboring areas in response to other forces, such as the potential supply of suburban housing. This conclusion, of course, corresponds to the general observation that such areas as Sutton, Blackstone, Mendon, and the northern part of Northbridge are experiencing an influx of population from neighboring urban areas.

Further support for the proposition appears in the strong correlation between in-migration and out-commuting (Table 13). If population is attracted to a town by housing

TABLE 11

MIGRATION 1950 - 1960

	<u>Pop. 1950</u>	<u>1950- 1960 Migration</u>	<u>Migration as % of Pop.</u>
Blackstone	4,968	- 486	- 9.8%
Douglas	2,624	- 302	-11.5
Hopedale	3,479	226	+ 6.5
Mendon	1,619	232	+14.3
Millville	1,692	- 290	-17.1
Northbridge	10,476	- 856	- 8.2
Sutton	3,102	45	+ 1.5
Uxbridge	7,007	- 78	- 1.1
Worcester Co.	546,401	-26,089	- 4.8
Massachusetts	4,690,514	-86,829	- 1.9

Source: U.S. Department of Commerce
Massachusetts Department of Commerce and
Development

28

TABLE 12
OUT-MIGRATION - BLACKSTONE VALLEY

	<u>1960 to 1970</u>	<u>1950 to 1960</u>	<u>Total Net Migration</u>
Blackstone	621	- 486	135
Douglas	144	- 302	- 158
Hopedale	165	226	391
Mendon	267	232	499
Millville	94	- 290	- 196
Northbridge	- 66	- 856	- 922
Sutton	547	45	592
Uxbridge	- 229	- 78	- 307

Prepared by Massachusetts Department of Commerce and
Development, Bureau of Area Planning

TABLE 13RANK CORRELATION BETWEEN OUT-COMMUTING AND IN-MIGRATION

	<u>Out-Commuting %</u>	<u>Rank</u>	<u>In-Migration</u>	<u>Rank</u>
Blackstone	.88	1	12.1	3
Douglas	.40	6	5.6	5
Hopedale	(.49)*	8	4.1	6
Mendon	.66	3	12.9	2
Millville	.55	4	6.0	4
Northbridge	.35	7	- .6	7
Sutton	.73	2	15.0	1
Uxbridge	.54	5	- 2.9	8

R = .762

*In-Commuting

Prepared by Massachusetts Department of Commerce and
Development, Bureau of Area Planning

and not by jobs, then it should follow that these in-migrants will retain their jobs outside the area and commute to them on a daily basis. Therefore, the towns with the most in-migration will also tend to have the highest rate of out-commuting. Table 13 shows that this correlation holds true in the case of the Blackstone Valley.

The fact that this area shows net in-migration during the 1960 - 70 period obviously does not mean that there was no out-migration. In fact, it is likely that out-migration was substantial, especially among certain groups. It is not really legitimate to balance out-migrants against in-migrants, because the characteristics of the two groups tend to be different. In the case of the Blackstone Valley region, there are two primary differences: (1) the out-migrants tend to be younger than the in-migrants and (2) the out-migrants represent a subtraction from the available labor force, while the in-migrants are not generally a real addition.

The first difference is evident from Table 14. There was a net out-migration of 1,037 among the age group that was 5 - 14 years old in 1960, and a net in-migration of 591 for the 1960 15 - 24 age group. Furthermore, a substantial portion of both in- and out-migration is attributable to these two age categories. For purposes of discussion, the first age group (5 - 14 in 1960) can be generalized as those who out-migrated during the 1960 - 1970 period in search of new jobs, and the second (15 - 24 in 1960) as those who in-migrated in search of suburban residential housing. As would be expected, there is a high proportion

TABLE 14

POPULATION IN SELECTED AGE GROUPS
1960 and 1970, BLACKSTONE VALLEY

<u>Age Group</u> <u>1960</u>	<u>1960</u>	<u>1970</u>	<u>Age Group</u> <u>1970</u>
5 - 14	7415	6378	15 - 24
15 - 24	4211	4802	24 - 34

of males among the out-migrants, while the male-female division among the in-migrants is almost even. The out-migration rate of males in the first age group during the decade was almost 19 percent. Although this loss was partly offset by in-migrants from the 15 - 24 age group, it is clear that those who out-migrated were younger on the average than those who in-migrated.

Just as important as the age difference is the differential impact on the size of the labor force. Those who leave the Valley are generally young, and have lived in the area most of their lives. They probably have not yet specialized in a particular skill, and may have no job at all at the time they leave. These people represent potential labor for any firm locating in the Valley, and their departure results in a subtraction from the labor supply. Those who come into the area on the other hand, are part of the labor force only in the sense that they have a job. Most of them already have jobs when they come to the Valley, and probably have developed skills peculiarly suited to those jobs. They tend to be older, with families, and therefore less likely to change jobs, and to have working wives. Furthermore, there are intangible factors; the in-migrants do not consider their place of residence as a place of work, and may even be opposed to the location of industry nearby. For these reasons, it is likely that the supply of labor available to a firm wishing to locate in the Blackstone Valley is not increasing as a result of the migration pattern, and may even be decreasing.

The effect of both out-migration and suburban in-migration on conditions other than the labor supply are familiar to everyone who has looked at the problem. In the trade between out-migrants and in-migrants of the sort discussed, there is a certain loss of area unity as more and more people find their jobs and social or family ties in other areas.

It is not the aim of this study to examine these problems in detail, for most of them are primarily social in terms of their effect. However, it is important to realize that the problems associated with in and out-migration are often the most difficult problems faced by a region. Of all the questions which may be asked about an area, the questions of why people leave, why people stay, and why people enter are probably the most basic. In the final analysis, what a region is able to do depends on the size and nature of its population, and yet population is perhaps the most difficult to control of all the variables in the development formula. In the section of this report dealing with area potential, population characteristics will be examined in more detail.

IV. AREA POTENTIAL

The first major portion of this study dealt with the present economic condition of the Blackstone Valley, with reference to employment opportunity, income, and population growth. For the most part, the "Economic Conditions" section is concerned with the present and the recent past of the region, and is largely descriptive rather than analytical. It was shown in that section that there is a present shortage of employment opportunity in the region relative to the population, and that this shortage has contributed to high unemployment rates and high rates of out-commuting. It was also found that incomes in the region are below the state average, and that there is a relatively high proportion of low income families. Finally, the most recent population census shows that although there was net migration into the Valley between 1960 and 1970, there was also considerable out-migration among the younger age groups.

The trends described in the "Economic Conditions" section obviously indicate problems the severity of which depends on the observer's point of view. No one who would like to see the Valley operate once again as an employment growth center can be greatly encouraged by the data presented. On the other hand, for those who accept the region's growing role as a residential area, the data is less disconcerting. To be sure, some of the problems associated with unemployment and low incomes should be of concern to everyone, regardless of their conception of what the Blackstone Valley economic role should be.

Thus, although this part of the study is oriented toward the industrial development potential of the area, it does not necessarily follow that industrial development is the area's only hope, or even that it should be given first priority. It may even turn out that the area's growing residential nature will make a large influx of industry undesirable.

However, as has already been pointed out, there are serious problems in the economic picture of the Blackstone Valley even if one accepts the trend toward a future residential role for the area. Suburban in-migration cannot by itself solve the problems of unemployment and below-average incomes. For these problems to be solved, the region must create employment opportunity for which the unemployed or low-income resident is suited. Alternatively, these residents can be trained or re-trained so that they fit the jobs which are available. But in either case, the jobs must be found, and whether or not jobs can be found depends ultimately on the industrial development potential of the area.

Another reason for being concerned with industrial development is that the region has somewhat better control over jobs located within its borders than over jobs located elsewhere. A completely residential area in effect depends on its industrial neighbors to supply its residents with jobs and income. To the extent that local policy affects industry, the residential area abdicates control over its residents' sources of income.

This part of the study therefore assumes that some degree of industrial development will be important and beneficial to the Blackstone Valley Region, and examines the present and future potential for development. The discussion of area potential will be divided into two main branches. First, there will be an examination of those general factors which are widely believed to form the basis for economic growth in any small region. These are: population and labor force, existing industry, land-use and zoning, transportation, and public services. Second, since like every other region the Blackstone Valley has special problems and qualities which are of equal importance to the general factors, these special factors will be studied as well. They include the problem of regionalization, the pollution problem, and the potential for recreation and tourism.

Each one of the eight general and special factors will be discussed in a separate section in greater or less detail depending on its importance and the amount of information available. The remainder of this section will be devoted to a brief discussion of the theoretical relationship of each of the five general factors to the economic growth of a region.

Population and Labor Force

Existing Industry

Land-Use and Zoning

Transportation

Public Services

(to be completed in final study)

V. POPULATION AND LABOR FORCE

This section deals basically with the first variable in the production formula: labor. In order to determine the ability of a region to produce goods and services, something must be known about the ability of its population to work. The work capability of a given population in turn depends on its size, its age structure, its labor participation rate, its skills and its education.

1) Labor force characteristics

In 1970, the combined population of the eight Blackstone Valley towns stood at 42,731. Population density ranged from only 80 persons per square mile in Douglas to 838 in Hopedale. The average density was 276 persons per square mile. There is no clear pattern of population distribution; the major population centers are quite widely dispersed. However, it is apparent that the demographic "heart" of the region is the central area including Whitinsville, North Uxbridge and Uxbridge Center. In 1970, this area accounted for 25 percent of the total population of the Valley, and for 53 percent of the population residing in urban centers.

The age structure of the Blackstone Valley population is shown in Table 15. There are no major differences between the percentages for the Valley and those given for Massachusetts. Among the towns however, there is considerable variation. Hopedale has the lowest percentage of residents younger than 25

TABLE 15

POPULATION BY AGE GROUP 1970

Town or Area	Total Pop.	Pop. Age 25-64		Pop. Age 24 & Under		Pop. Age 65 & Over	
		Number	% of Total	Number	% of Total	Number	% of Total
Blackstone	6,566	2,774	42.2%	3,146	47.9%	639	9.7%
Douglas	2,947	1,386	47.0	1,257	42.7	304	10.3
Hopedale	4,292	1,933	45.0	1,790	41.7	569	13.3
Mendon	2,524	1,126	44.6	1,135	45.0	263	10.4
Millville	1,764	706	40.0	832	47.2	226	12.8
Northbridge	11,795	5,084	43.1	5,275	44.7	1,436	12.2
Sutton	4,590	2,038	44.4	2,097	45.7	455	9.9
Uxbridge	8,253	3,668	44.4	3,684	44.6	901	10.9
Blackstone Valley	42,731	18,715	43.8	19,216	45.0	4,793	11.2
Massachusetts	5,689,170	2,506,201	44.1	2,546,784	44.8	636,185	11.2

TABLE 16

POPULATION BY AGE GROUP 1960

Town or Area	Total Pop.	Pop. Age 25-64		Pop. Age 24 & Under		Pop. Age 65 & Over	
		Number	% of Total	Number	% of Total	Number	% of Total
Blackstone	5,130	2,337	45.6%	2,280	44.4%	513	10.0%
Douglas	2,559	1,246	48.7	1,004	39.2	309	12.1
Hopedale	3,987	2,015	50.5	1,533	38.5	439	11.0
Mendon	2,068	980	47.4	878	42.5	210	10.1
Millville	1,567	709	45.2	669	42.7	189	12.1
Northbridge	10,800	5,203	48.2	4,470	41.4	1,127	10.4
Sutton	3,638	1,713	47.1	1,606	44.1	319	8.8
Uxbridge	7,789	3,683	47.3	3,304	42.4	802	10.3
Blackstone Valley	37,538	17,886	47.6	15,744	41.9	3,908	10.4
Massachusetts	5,148,578	2,440,049	47.0	2,136,920	41.5	571,609	11.1

and the highest percentage of residents older than 64. On the opposite end of the scale is Blackstone, with the highest share of young people and the lowest share of old people. The percentage of "productive population" (age group 25 - 64) was highest in Douglas (47.0 percent) and lowest in Millville (40.0 percent). For the Valley as a whole, the percentage was 43.8 percent.

During the past decade there was a substantial realignment of the age structure of the Blackstone Valley population. The 65-and-over age group increased from 10.4 percent to 11.2 percent; the 24-and-under group increased from 41.9 to 45.0 percent, and the "productive population" percentage fell by almost four points, from 47.6 to 43.8 percent. This means that on the average today each potential member of the labor force must support more non-members than in 1960. Most of the increase in the 24-and-under group occurred in the youngest age brackets; the natural increase in the 15 - 24 age bracket was diminished by out-migration. Therefore, it is expected that by 1980 the productive 25 - 64 age group will be even smaller as a percentage of total population. This will naturally tend to decrease the size of the labor force, unless the labor participation rate increases.

In 1970 there were 28,898 Blackstone Valley residents 16 years of age or older. Preliminary census figures indicate that of this group 62 percent, or about 17,900 were labor force participants. This participation rate is significantly greater than the state average of 59.6 percent. Much the same situation

TABLE 17
POPULATION DENSITY 1960 AND 1970

	<u>1970 Pop.</u>	<u>Area (sq. mi.)</u>	<u>1970 Density</u>	<u>1960 Density</u>
Blackstone	6,566	10.97	599	468
Douglas	2,947	36.93	80	69
Hopedale	4,292	5.12	838	779
Mendon	2,524	17.73	142	117
Millville	1,764	4.92	359	318
Northbridge	11,795	17.33	681	623
Sutton	4,590	32.48	141	112
Uxbridge	8,253	29.29	282	266
Blackstone Valley	42,731	154.77	276	242
Worcester County	637,079	1,511.80	421	386
Massachusetts	5,689,170	7,838.68	726	657

Source: Massachusetts Department of Commerce and
Development

TABLE 18

POPULATION 1960 AND 1970, PERCENT CHANGE 1960 - 1970

<u>Town or Area</u>	<u>Pop. 1970</u>	<u>Pop. 1960</u>	<u>Percent Change</u>
Blackstone	6,566	5,130	+ 28.0%
Douglas	2,947	2,559	+ 15.2
Hopedale	4,292	3,987	+ 7.6
Mendon	2,524	2,068	+ 12.6
Millville	1,764	1,128	+ 22.1
Northbridge	11,795	10,800	+ 9.2
Sutton	4,590	3,638	+ 26.2
Uxbridge	8,253	7,789	+ 6.0
Blackstone Valley			
Total	42,731	37,538	+ 13.8%
Worcester County	637,079	583,228	+ 9.2
Massachusetts	5,689,170	5,148,578	+ 10.5

Source: U.S. Department of Commerce, Bureau of
the Census

prevailed in 1960, when about 58.4 percent of those 14 years of age and older were labor force participants, compared with a state average of 56.9 percent. In 1960, the Valley's higher rate was explained by a somewhat higher male participation rate. About 80.7 percent of all males 14 years and older were labor force participants in that year as were 37.7 percent of all females 14 and over. Thus, the female participation rate was less than half the male rate. For the state as a whole, the male and female participation rates were 77.8 percent and 38.2 percent, respectively. Table 19 shows that the male - female division in the Valley labor force was closer to that of the state's urban pattern than the pattern for rural non-farm areas.

However, the pattern is not really consistent among the various communities in the Valley. Although (excluding Millville) the male participation rates are all roughly within the same range, the female participation rates vary considerably, from a low of 31 percent in Sutton to a high of 45 percent in Blackstone. Therefore it is clear that while high male participation explains the differential between the Blackstone Valley and the state, high female participation explains the differentials which exist within the Valley. The significance of a high percentage of females in the explanation of high participation rates is evident from Table 20, which shows a perfect rank correlation between the level of a town's participation rate and its percentage of female workers. That is, the ranking of the six towns with respect

41

TABLE 19
PARTICIPATION RATES, 1960 CENSUS

<u>Town or Area</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>
Blackstone Valley	58.4	80.7	37.7
Mass. Total	56.9	77.8	38.2
Mass. Urban	57.2	77.8	39.0
Mass. Rural Non-Farm	55.5	77.6	33.4

TABLE 20

1960 PARTICIPATION RATE AND FEMALE PERCENT OF LABOR FORCE

	<u>Total Part. Rate</u>	<u>Rank</u>	<u>Female % of Labor Force</u>	<u>Rank</u>	<u>Female Part. Rate</u>	<u>Rank</u>
Blackstone	63.1%	1	37.8%	1	.45%	1
Hopedale	56.8	5	32.0	5	.35	5
Millville	60.6	2	34.4	2	.38	2
Northbridge	57.6	3	33.6	3	.38	3
Sutton	53.7	6	27.9	6	.31	6
Uxbridge	57.4	4	33.1	4	.36	4

to labor force participation rate is in the same order as their ranking with respect to percentage of females in the labor force.

Another significant aspect of the female labor participation rate is its strong correlation with out-migration. Although labor force data is available for only six of the eight towns, there is a clear tendency for the towns with the greatest net loss of population between 1950 and 1960 to have the highest percentage of female laborers as well. (See Table 21). The best explanation for this correlation seems to be that both variables are responsive to the decline in employment opportunity for male members of the labor force. As high-wage job opportunity disappears, young males out-migrate in search of more promising employment. Often this creates a demand for unskilled low-wage labor, a demand which is met by increased female participation in the labor force. Another part of the explanation may be related to in-migration. The data suggests that the class of those who migrate into the Valley in search of suburban housing does not include a large number of families with working wives. Therefore the towns with heavy in-migration will tend to have lower female participation rates, and at the same time will tend to have lower net out-migration. Especially in light of the latter explanation, the 1960-70 net migration figures in Table 10 would indicate declining female participation rates for Blackstone, Mendon, and Sutton, and more stable rates for the other five towns.

TABLE 21RANK CORRELATION BETWEEN MIGRATION 1950-1960AND FEMALE PARTICIPATION RATE 1960

	<u>1950-1960 Migration as % of Pop.</u>	<u>Rank</u>	<u>Female Part. Rate</u>	<u>Rank</u>
Blackstone	-9.8%	2	.45	1
Hopedale*	+6.5	6	.35	5
Millville	-17.1	1	.38	2
Northbridge	-8.2	3	.38	3
Sutton	+1.5	5	.31	6
Uxbridge*	-1.1	4	.36	4

*Urbanized portion of town.

2) Growth Trends and Prospects

Between 1950 and 1960, population in the Blackstone Valley grew by only 7.4 percent. During the following decade, the rate increased to 13.8 percent. The difference is accounted for by a reversal of the net migration pattern. In the earlier period, there was net out-migration of the population. The latter period saw net in-migration of about the same amount. (Table 10) Exclusive of in- or out-migration, the "natural" population increase in the Valley was actually greater in percentage terms during the earlier period.

For purposes of determining the effect of these changes on the area's labor force, it is not enough to deal simply with the amount of increase or decrease. Equally important are the characteristics of those who enter and of those who leave. Some of these characteristics have already been mentioned in the discussion of the economic condition of the Valley (Section III). There it was pointed out (1) that the out-migrants are generally younger than the in-migrants, (2) that out-migration occurred largely among males, while in-migration was fairly evenly divided between males and females, (3) that out-migration was largely motivated by outside employment opportunity, and (4) that in-migration was probably the result of other factors, such as the availability of suburban housing in the area.

The future growth of the area's labor force depends on a great number of factors. In broad terms, these are natural population increases (births over deaths), migration, and changes in the labor force participation rate. These three factors are in turn influenced by each other and by the entire complex array of social, political, and economic influences which exist in the regional environment. Because of this complexity, it is difficult to forecast the level of population and labor force which will prevail in the future. In a sense, moreover, predictions of this kind are self-defeating, because any major step taken in reliance on them is likely by itself to change the ultimate figure. However rough these predictions are, though, they are usually better than no guess at all because they at least provide a general framework within which policy decisions can be made.

At present, the number of jobs in the Blackstone Valley amounts to only about 60 percent of the area labor force, and that percentage has been dropping steadily. Even assuming that the recent decline in available jobs can be stopped in future years, the percentage will continue to drop as the labor force grows. In order to insure that the availability of jobs will remain at its present 60 percent level, it is of course necessary that job opportunities expand at the same rate as the labor force.

The size of the labor force depends on (1) the size of the population (2) the age structure of the population, and (3) the labor force participation rate. In 1970, there were

TABLE 22
POPULATION 6 YEARS AND OVER 1970

	<u>Male</u> <u>1970-6 and over</u>	<u>Female</u> <u>1970-6 and over</u>	<u>Total</u>
Blackstone	2,759	3,018	5,777
Douglas	1,289	1,303	2,592
Hopedale	1,852	2,053	3,905
Mendon	1,099	1,169	2,268
Millville	749	826	1,575
Northbridge	4,928	5,467	10,395
Sutton	1,986	2,034	4,020
Uxbridge	3,576	3,796	7,372
Blackstone Valley Total	18,238	19,666	37,904

37,904 persons 6 years of age or older residing in the Blackstone Valley. Ignoring for the moment migration and deaths, this figure represents the number of people who will be 16 and older in 1980, and potential members of the labor force. Applying standard death rates to this group, the population structure shown in Table 24 can be derived.

Estimating the effect of migration on the size of the labor force is a very complex problem. At least in the case of the Blackstone Valley, it is not usually valid to assume that the same migration pattern will continue from one census year to the next. Table 12 shows that the 1950-60 pattern was completely different from the 1960-70 pattern. Despite this uncertainty, there are strong reasons to believe that the migration pattern of the present decade will resemble that of the 1960-70 period; in any case no more reliable estimate is available. Therefore it can be assumed for purpose of discussion that net in-migration of about 1,500 persons will occur between 1970 and 1980.

However, it does not necessarily follow that the working-age population will increase by this amount. The 1960-70 net in-migration, for example, was brought about by (1) out-migration of young working-age people (16, 17, 18 year-olds), and (2) in-migration of a roughly equal number of somewhat older working age people, with children. Thus, the net migration figure represents mostly children too young to be included in the working-age population. Since it is quite possible that the same effect will be observed during the 1970-80 period, no

TABLE 24BLACKSTONE VALLEYESTIMATED WORKING AGE POPULATION FOR 1980

<u>Age Group</u>	<u>Est. 1980 Population</u>
16 - 24	7,922
25 - 34	6,282
35 - 44	4,653
45 - 54	4,283
55 - 64	4,356
65 - 74	2,829
75 and over	1,673
Total age 16 and over	31,998

Prepared by Massachusetts Department of
Commerce and Development, Bureau of
Area Planning

great error will result in this case from ignoring the direct effect of migration on the size of the working-age population. Of course, many of the children of those who in-migrated between 1960 and 1970 will be counted as members of the 1980 working-age population, since that figure was arrived at in part by adding ten years to the age of every 1970 Blackstone Valley resident, and including those 16 and over in the potential labor force.

Having arrived at a rough estimate for 1980 working-age population, the final step in forecasting the labor force is to estimate a labor force participation rate. In 1970, that rate was about 62 percent for the Blackstone Valley. However, because of changes in the structure of the population brought about by migration of population, it is likely that that rate will drop by 1980, probably to around 60 percent. Applying this rate to the 1980 working-age population estimate in Table 24, the 1980 labor force can be roughly pegged at 19,200 workers. If employment does not increase at all during the next nine years, employment as a percent of the labor force will fall from its present level of about 60 percent to 56 percent. In order to keep the ratio at 60 percent, jobs will have to increase by 7 percent, to about 11,500. To increase the ratio to 70 percent, the number of jobs will have to grow by 25 percent. These figures indicate the magnitude of the development effort faced by the Valley in coming years, if the area is to regain its status as an employment center.

Skills and Education of the Labor Force

(This section will be completed in the final draft of the study. It will include a brief summary of available data on the skills of the Valley labor force. Also, there will be some discussion of the educational facilities in the area, upon which the quality of the future labor force depends. The following is a draft version of the latter portion.)

Education - Blackstone Valley Region

Some regionalization of public education has occurred in the Blackstone Valley. Mendon has regionalized its entire system, grades K-12, with Upton, an adjacent community. Blackstone and Millville provide regional education for students in grades 7 - 12 in the newly constructed Blackstone-Millville Regional Junior-Senior High School. The Blackstone Valley Regional Vocational School is another instance of a specific educational problem being solved regionally.

The other five communities (Douglas, Hopedale, Northbridge, Sutton, Uxbridge) operate 5 separate, non-regional school systems. On numerous occasions the quality of education provided by these small, often antiquated school systems has received marked criticism. Presently, the Douglas and the Sutton secondary schools lack accreditation. Northbridge has been granted a type of temporary, somewhat provisional accreditation by the New England Association of Colleges and Secondary Schools. Both Hopedale and Uxbridge operate accredited secondary schools.

A chart showing the post graduate plans for the 1970 graduating class reveals district variances from state averages.

Many problems related to public education confront the individual communities. Many citizens assert the communities cannot financially support the school system. Citizen attitudes have, on occasion, limited progress in the area of education. Realizing the value of education, but fearful of additional costs, citizens have defeated measures that would improve educational systems. Since 1968 three proposals providing for secondary education regionalization between Sutton and Douglas have been defeated.

In the area of education administration, five towns (Douglas, Hopedale, Northbridge, Sutton, Uxbridge) have their own superintendent. The former Sutton-Douglas school union 52 was dissolved. Presently, each community operates their own school system administered by separate superintendents. This move to dissolve the union typifies the parochial, short-sightedness common to the Valley.

Together the towns of Mendon and Upton form school union 59. Nipmuc Junior-Senior High School, the intermediate and secondary education facility of the union, experiences overcrowding. Double sessions have been instituted at Nipmuc as a means of temporary alleviating the overcrowding. Additions to the existing facility offer a long run solution.

Blackstone and Millville have studied the feasibility of total K-12 regionalization. Such a measure would facilitate the present administrative organization. Presently, four school

TABLE 25

EDUCATION - BLACKSTONE VALLEY REGION

Post Graduate Plans - 1970 - Secondary Education

	Number of Grad.	4 Yr. State	4 Yr. Other	2 Yr. State	2 Yr. Other
Blackstone-Millville	75	7 - 9.3%	2 - 2.6%	8 - 10.6%	7 - 9.3%
Douglas	32	9 - 28.1%	1 - 3.1%	2 - 6.2%	0 - 0%
Mendon-Upton	81	13 - 16.0%	11 - 13.5%	2 - 2.4%	9 - 11.1%
Hopedale	64	10 - 15.6%	14 - 21.8%	4 - 6.2%	13 - 20.3%
Northbridge	144	23 - 15.9%	23 - 15.9%	10 - 6.9%	12 - 8.3%
Sutton*	48				
Uxbridge	89	12 - 13.4%	4 - 4.4%	4 - 4.4%	7 - 7.8%
Total (Sutton excluded)	485	74 - 15.2%	55 - 11.3%	30 - 6.2%	48 - 9.9%
Statewide Average		14.6%	20%	10.4%	6.0%

* Sutton's figures were reported in terms of the total percentage of graduates continuing education at a four-year college and the total percentage of graduates continuing education at a two-year school.

4-year college = 35%
2-year college = 17%

committees are connected with education of the two communities.

The Blackstone Valley Vocational Technical School provides technical and vocational education for area residents. The region serviced by this institution includes Bellingham, Blackstone, Douglas, Grafton, Hopedale, Mendon, Milford, Millbury, Millville, Northbridge, Sutton, Upton, and Uxbridge. This facility cannot accept all the applicants. One hundred sixty students out of 389 applicants were accepted in the September 1970 freshman class.

The survey reported, "Some companies feel that the vocational school has been a real asset to the entire area and have hired some of its graduates. Other companies contend it has been of no benefit to them. One company (Haywood-Schuster) fought for courses in the textile industry, but was unsuccessful."

An indication of the success of the vocational school may be viewed in terms of the post graduate plans of seniors. All of the seniors were placed in jobs before graduation, and 22 of the graduates decided to continue their education.

Only recently has there been a move to higher education facilities in the Blackstone Valley region. In September, Quinsigamond Community College will operate a branch facility at the Blackstone-Millville Regional High School. Each evening course will carry three credits and may be applied to an associate degree.

Increasingly rising costs in the area of public education confront each community. Communities regionalized in

education are eligible for more state aid in the area of construction and planning costs of new facilities. The majority of the communities have ignored this and other advantages of regionalization. Consequently, the educational needs of the communities have frequently gone unattended.

Unions

(This section will be completed in the final study.)

VI. EXISTING INDUSTRY

The most important factor in the development of a region such as the Blackstone Valley is the growth potential of its existing industry. If that potential is great enough, the necessity of attracting new industry into the area virtually disappears. On the other hand, if existing industry is declining, it is necessary to bring in new firms simply to keep even in terms of employment opportunity. It is a well known fact that in the Blackstone Valley the traditional employers have greatly reduced their labor requirements in recent years, and as a result residents have been obliged to commute to neighboring communities in search of work, or move out of the Valley entirely. Blackstone Valley communities that were once known as "company towns" now find those companies unable ~~or~~ unwilling to provide for the economic well-being of local residents. It should now be clear that the future of economic development in the Valley no longer lies completely in the hands of three or four large firms. Nevertheless, it remains true that these companies are the area's dominant employers, and without major autonomous development efforts on the part of the towns the employment situation in the area will continue to be a direct function of the fortunes of these companies. In recognition of this fact, an attempt is made in the following pages to describe briefly the relationship between existing industry and the local economy, and to analyze the growth prospects of industry in the area.

The story of manufacturing industry in the Blackstone Valley is a long and interesting one. A more detailed description of that history appears in the historical Appendix at the end of this report. Beginning around 1800, cotton mills began to appear in the area. These were followed by woolen mills and somewhat later by firms manufacturing textile machinery. By the middle of the nineteenth century manufacturing had established itself over agriculture as the industry most important to the economic life of the area. Clustered on the banks of the Blackstone River, and sending or receiving goods by means of the Blackstone Canal or the Providence and Worcester Railroad, the mills built the area into one of the most important industrial centers in the United States.

This period is described in a history of the area prepared recently by the state Department of Natural Resources:

"The mill village way of life dominated the towns of the Valley; this legacy still haunts the region today. If the Valley of today seems to be somewhat behind the times, the Valley of the mill era seems downright medieval. Looking at a topographical map of the Valley gives an idea of how it grew. Each town is made up of several villages which consist of a large building surrounded by several smaller ones. The large building, of course, is the mill, the smaller ones are the company houses, built and owned by the mill owners for the employees. The type of society in these company towns could be considered feudal;the company provided and maintained housing, schools, stores, recreation, and the other apparent needs

for the workers, in return for which they provided cheap labor for the mills. Life in the mills has been described in the poems of Robert Frost and in the stories of Jack London. As bleak as it seems, with long, hard work days and low pay, this era is recalled by many as the "good old days". People weren't usually dissatisfied with their lot, since they knew no other way of life. They had little to worry about, on warm evenings they flocked to the village green to hear the company band. They cheered for the company team in the Blackstone Valley Baseball League. On Sundays, they went to the company picnic. The company painted their houses, mowed their lawns, shovelled their sidewalks. Town lines were meaningless -- people thought of themselves as residents of their particular mill village...."

The decline of the mills took place in several phases. There were some plant closings in the early 1900's, and still more during the Depression. World War II brought a brief renewal of prosperity, but following the War the area became the victim of the Mass exodus of textile firms to the south. Since 1950, there has been a gradual but steady decline so that in 1969 manufacturing employment stood at only 4,450 workers, or 41 percent of its level 19 years previously.

The four industrial complexes on which this area depends are textiles in Douglas and Uxbridge and textile machinery in Northbridge and Hopedale. In 1960, these four accounted for 92 percent of all Valley manufacturing employment; in 1969 their share was still high at 83 percent despite a collective decrease in employment of 44 percent during the intervening

period. Virtually all of the overall decline in manufacturing employment in the area is attributable to these four industries; the other manufacturing firms in the Valley actually showed a combined net increase of 40 percent during the 1960-69 period, but these firms were all too small to have a major impact on the number of jobs. In the future, these small firms may become significant employers of area labor, but at the present time what happens to Valley manufacturing depends almost solely on what happens to the four large industries.

Some indication of the future growth of manufacturing appears in the responses to the survey made by the Department in June. Of the twenty-four manufacturing firms contacted, about one-third were considering or had just completed expansion of plant facilities. Only a few mentioned the possibility of relocation, but one of these was the Draper Corporation, which is by far the largest employer in the area. Thirteen firms foresaw no change in their prospects for the near future; only two expected business to improve and the rest expected a decline. Once again, the Draper Corporation was among those firms anticipating a decrease in their future demand for labor. The survey also showed that between 1965 and 1970, only three or four firms showed significant cutbacks in employment. The rest generally kept even, and several increased substantially. However, the firms that declined happened to be the largest firms, and as a result their difficulties far outweighed the success of some of the smaller firms.

From these survey results it seems clear that apart from Draper and a few other large firms, manufacturing in the Blackstone Valley is not particularly unhealthy. In future years the smaller firms in the area can probably be counted on to generate an annual increment of well over a hundred new jobs. Between 1969 and 1970, for example, six small firms combined to produce about 150 new jobs. Unfortunately, this rate of increase would be insufficient to provide adequate employment opportunity even if some of the large employers in the area were not declining. Still, the increase in employment among the small firms is an indication that the area is capable of fostering manufacturing growth.

There is no sure way of predicting what will happen to the Valley's leading industries over the next few years. Draper has been reducing its employment and is considering relocation. Whitin Machine Works has also been forced to cut back considerably, but has no plans for relocation. Hayward-Schuster in Douglas seems capable of moderate employment increases in the future; between 1969 and 1970 the firm added 20 new workers, and indicates that it could use about 25 more. The Uxbridge mills likewise have been able to increase their payrolls since 1969, but future increases will depend heavily on the national outlook for the textile industry.

Improvements in the area's transportation network and the early resolution of problems in the area of pollution will contribute greatly to the growth prospects of all manufacturing firms in the area. Every firm interviewed by the Depart-

ment indicated that it used trucking for receipt and delivery of goods; three-quarters relied exclusively on trucking. The improvement of Route 146, which cuts on a diagonal through the Valley, should provide much improved access to outlying areas of supply and demand. Another area of transportation where improvement is needed is the railroad service. Although only a few firms presently use rail transportation, demand for this mode would be much greater if service could be improved, and the resulting reduction in transport costs would be helpful to area firms. Those few firms that are presently dependent on the railroad almost uniformly complain of poor service and list improvement of rail service as one of the foremost needs in the area.

The high cost of pollution control has also been a major adverse factor confronting manufacturing firms in the Valley. Few of the major employers have been unaffected by the enforcement of recently enacted water quality control legislation, and a few firms claim to be facing economic ruin. In general there has been a lack of cooperation between the towns and the companies in this area, with the result that many firms have been forced to build their own waste treatment facilities after being refused access to the proposed or existing town facilities. Until the problem of sewage treatment is solved, it is unlikely that existing firms will be able to expand their production facilities, with the result that employment growth will be seriously retarded.

VIII. TRANSPORTATION POTENTIAL

Industrial location and expansion is dependent on the accessibility of a region both for labor and materials. State and local government have strong influences on industrial location through partial determination of transportation costs. Public authorities have been responsible for the basic decisions about layouts of routes and the speed of the development of principal means of transportation and communication, and therefore transportation costs. The size and location of a firm's market and supply area are directly influenced by the advantage of different locations for procurement and processing, and by the structure of the transportation costs. Producers, in general, have an incentive to locate as near efficient transportation routes as possible, minimizing freight cost. This factor accounts for much of the growth in industrial development along routes 90, 495 and the Worcester Expressway.

Presently the Valley suffers from lack of efficient connecting transportation routes and is therefore less competitive with alternative sites when a prospective business considers the Valley as a possible site for development. Planned highway improvements will make the Valley more attractive provided industrial sites that are made available are coordinated with the transportation requirements of business.

Route 146

60

Route 146 is clearly the most important transportation route within the Valley. Traffic volume on routes 122 and 146 between Worcester and Providence has increased to over 24 thousand cars a day south of route 20 and will increase substantially in the future with the improvements currently under construction and the development of a second barrel paralleling the present route. Until the route connects directly to the Massachusetts Turnpike it remains an inefficient access route to the major highway systems. A connection would make the Valley far more accessible and reduce the region's traffic connecting with the Massachusetts Turnpike along route 122.

Route 122

Route 122 runs north and south, the length of the Valley but passes through several densely settled areas, and for this reason cannot be considered an efficient transportation route. The traffic volume consists of a mixture of local and regional traffic and thus congestion occurs within the intersection of the two. The route connects with the Massachusetts Turnpike at Millbury and therefore offers more direct access than Route 146. It carries more of the traffic that would move along 146 except for the fact that it does not offer direct connection to Interstate 90 at this time. Redirection of route 122 so that it avoids going through the centers of towns would facilitate traffic flow and potentially afford new industrial development sites to the area.

Route 16

69

Route 16 crosses the Valley from Webster east to Milford and continues toward Boston. Traffic connecting with route 495 at Milford use interchanges with routes 85 and 109, therefore route 16 is both a connection for region traffic and a local transportation route. The original purpose of the road as a means of travel across the Valley towards Boston has changed because of the development of multi-lane expressways around the Valley. Traffic gaining access to the expressways now clogs the local traffic and changes the purpose the route serves. Traffic originating in the Valley or traversing it should in the future be provided with an alternative to mixing with the local traffic before connecting with the highway system.

Route 52

Route 52 as it presently exists has less effect on the Blackstone Valley than the Massachusetts Turnpike or route 495. Completion of the route to the north of Webster with adequate access routes to the Valley will give the western section of the Valley access north to Worcester or south towards Connecticut.

Local Transportation

Transportation within the towns of the Valley is accomplished mainly by local roads and does not for the most part present any foreseeable problem provided that future regional traffic have alternative routes. Any growth of economic activity will necessitate improved access to roads connecting to the major highway network.

Planned Highway Improvements

70

Route 146: widening of 8 miles of route 146 is under construction and will improve the flow of inter-regional and local traffic. Engineering plans have been drawn for the construction of another barrel paralleling the present route 146 from south of the Hartford Turnpike to Ironstone Road. This improvement should improve north-south travel and reduce some of the Valley's isolation.

Rail Service

Freight service for the Valley is provided by a single line running between Worcester and Providence. Businesses along the route are serviced by one train north and south a day. Freight is moved north connecting at Worcester or south at Providence to the larger rail networks. The track presently is leased by the Penn Central Railroad from the Providence Worcester Railroad but the status for the right to operate the line is in question at this time. The Providence-Worcester Railroad is seeking to regain the rights to operate the route from the Penn Central. Unless increased commercial and industrial activity enters the Valley increased rail service would most likely not be necessary. However, there is much room for improvement in the quality of service.

X. THE POLLUTION PROBLEM

One of the special factors which must be considered in an analysis of the Blackstone Valley economy is the pollution problem. All over the nation there is an increasing concern for the quality of air and water, and that concern has not left the Valley unaffected. In the area of air pollution, the problems are certainly no worse than the average for similar regions. But for a number of reasons the problem of water pollution is very serious.

The problem as it exists today has been brought about by a number of factors. First, many of the manufacturing firms in the Valley employ processes, such as wool dyeing and scouring or paper coating, which result in particularly heavy pollution. Second, a large portion of Valley industry grew up along the river banks, and for years these firms have used the rivers for carrying away their wastes. Third, the relatively low density of population in the region has discouraged development of effective sewer systems and sewage treatment facilities by the communities. Fourth, the water has been polluted by run-offs from improperly located dumps and junk-yards. Finally, since the area is down-river from extremely heavy polluters in the Worcester area, there has until recently been no effective way for the local communities to reduce the pollution of the river without cooperation from the north.

Many of these factors are identical to those faced by other areas which have developed along rivers in Massachusetts, and finally it became clear that the problem could not be solved

Commonwealth of Massachusetts
Water Resources Commission
Division of Water Pollution Control

BLACKSTONE RIVER BASIN CLASSIFICATION

<u>BOUNDARY</u>	<u>PRESENT USE</u>	<u>ANTICIPATED FUTURE USE</u>	<u>PRESSENT CONDITION</u>	<u>CLASSIFICATION</u>
The Blackstone River from the outlet of Steel Mill Dam at Greenwood Street, Worcester to the Mass. Turnpike, Millbury	Assimilation	Recreational boating Fish and Wildlife propagation Fishing Industrial processing Assimilation	U	C
From the Mass. Turnpike, Millbury to R. R. bridge above Fisherville Pond, Grafton	Assimilation	Power Certain industrial cooling & processing Assimilation	U	D
(1) From the R. R. bridge above the Fisherville Pond, Grafton to the Mass., R. I. State Line	Power Industrial cooling & processing Assimilation	Recreational boating Fish & wildlife propagation Fishing Industrial processing Assimilation	D	C
Kettle Brook from its source to the dam at Reservoir #1, Leicester	Water supply	Water supply	A	A
From the dam at Reservoir #1, Leicester to the outlet of Waite Pond, Leicester	Bathing Recreational boating Fish & wildlife propagation Fishing	Same	B	B

See notes at end of table.

<u>BOUNDARY</u>	<u>PRESENT USE</u>	<u>ANTICIPATED FUTURE USE</u>	<u>PRESENT CONDITION</u>	<u>CLASSIFICATION</u>
Kettle Brook from outlet of Waite Pond Leicester to the Middle River, Worcester	Industrial processing Assimilation	Fish & wildlife propagation Fishing Industrial processing Assimilation	U	C
Lynde Brook from its source to the dam at Lynde Brook Reservoir, Leicester	Water supply	Water supply	A	A
Middle River from its source to the Blackstone River, Worcester	Industrial processing Assimilation	Fish & wildlife propagation Fishing Industrial processing Assimilation	C	C
Tatnuck Brook from its source to the outlet of Holden Reservoir, Holden	Water supply	Water supply	A	A
The Quinsigamond River from its source to the inlet of Fisherville Pond, Grafton	Bathing Recreational boating Fish & wildlife propagation Fishing	Same	C&B	B
(2) The Mumford River from its source to its intersection with the Blackstone River, Uxbridge	Bathing Recreational boating Fish & wildlife propagation Fishing Industrial processing Assimilation	Bathing Recreational boating Fish & wildlife propagation Fishing Industrial processing	U,D,C,B	B

See notes at end of table.

BLACKSTONE RIVER BASIN

<u>BOUNDARY</u>	<u>PRESENT USE</u>	<u>ANTICIPATED FUTURE USE</u>	<u>PRESENT CONDITION</u>	<u>CLASSIFICATION</u>
(3) The West River from its source to its intersection with the Blackstone River, Uxbridge	Fish & wildlife propagation Fishing Industrial processing Assimilation	Fish & wildlife propagation Fishing Industrial processing	B & C	B
(4) The Mill River from its source to the Mass., R.I. State Line	Bathing Recreational boating Fish & wildlife propagation Fishing Industrial cooling	Same	B & C	B
The Peters River from its source to the Mass., R. I. State Line	Fish & wildlife propagation Fishing Industrial cooling	Same	B & C	B
(5) Wallum Lake in the Town of Douglas north-ly from a line extending from the southernmost portion of Douglas State Forest, easterly and parallel to the Mass., P. I. State Line	Bathing Recreational boating Fish & wildlife propagation Fishing	Same	B	B
- All streams which are public water supply in the Blackstone River Watershed area which cross the Mass., R. I. State Line unless denoted above		Water supply	A	A

- (1) Northbridge, Uxbridge, Millville
- (2) Sutton, Northbridge, Uxbridge
- (3) Northbridge, Uxbridge
- (4) Hopedale, Mendon, Blackstone
- (5) Douglas

without statewide coordination and enforcement. Accordingly, in 1967 the Commonwealth set down water quality standards which defined the desired use for each stretch of water as well as the allowable limits of each pollutant within that stretch. Also, a plan was established for the implementation of these standards.

Setting Objectives

The Division of Water Pollution Control (DWPC) of the Water Resources Commission has responsibility for setting and enforcing the state's water quality standards. The Division has put together a set of objectives for pollution abatement in the Blackstone River Basin. This schedule, expressed in terms of projected upgrading of the water from one classification to another, is summarized in Table A6. The classifications referred to there are defined as follows:

Class A water is designated for use in public water supplies in accordance with Chapter 111 of the General Laws. The water has uniformly excellent character.

Class B water is suitable for bathing and recreational purposes, agricultural use as well as certain industrial cooling and process uses. The water is excellent for fish and as a wildlife habitat, and has excellent aesthetic value; with appropriate treatment, the water can be made acceptable for the public water supply.

Class C water is suitable for recreational boating; irrigation of crops used for consumption after cooking; certain industrial cooling and process uses. It can be utilized as a habitat for wildlife and game fish indigenous to the region. Also, it has good aesthetic value. Under certain conditions and with appropriate treatment, it can be made acceptable for public water supply.

Class D water is suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class D waters will be assigned after all appropriate waste treatment methods are utilized.

Class U (unclassified) waters lack those qualities common to any of the aforementioned water classifications. Waters in this condition have limited usage due to the excessive level of pollution.

The Water Pollution Control Division's evaluation of the waters in the Blackstone River Basin resulted in the following findings:

From the railroad bridge above the Fisherville Pond in Grafton to the Massachusetts-Rhode Island State Line, the Blackstone River passes through Northbridge, Uxbridge, and Millville. The present condition of this particular stretch of river is D. Its present uses include industrial cooling and processing as well as assimilation and power. Action has been taken to raise the classification of the River to a C

standard. This improvement will make the river suitable for recreational boating, fish and wildlife propagation, fishing, industrial processing and assimilation.

The present classification of the West River from where it originates in Upton to its intersection with the Blackstone River in Uxbridge has been classified B and C. Its present uses include fish and wildlife propagation, fishing, industrial processing, and assimilation. Implementation of pollution standards in Uxbridge will improve the classification to B along the entire river. Future uses will not change significantly from the present uses.

The Mill River drains parts of Hopedale, Mendon, and Blackstone. Its present Class C rating allows for bathing, recreational boating, fish and wildlife propagation, fishing and industrial cooling. State measures will improve the river classification to B along the entire length. Anticipated future use remains the same as present river use.

The Mumford River has its source in Sutton, passes through Douglas and Northbridge, and intersects the Blackstone River in Uxbridge. The degree of pollution varies along the river; consequently river classifications include distinct and separate stretches of U, D, C, and B rated water. Presently, the river is used for bathing, recreational boating, fish and wildlife propagation, fishing, industrial processing, and assimilation. Pollution abatement measures will improve the river classification to B. The future use of the river prohibits assimilation, and allows the remaining present uses to continue.

Through the DWPC, state and federal financial aid is transmitted to communities for the construction of pollution abatement facilities. Under the present version of the 1966 Federal Water Pollution Control Act, a community which is a member of a regional planning district can be reimbursed for as much as 55 percent of the cost of a pollution abatement facility from the federal government. This amount, combined with the 25 percent reimbursement available from the state, would allow a community to construct such a facility for only one-fifth of its cost contingent on approval by the respective government agencies.

Even with this funding, however, the cost of abating water pollution remains very high. Furthermore, there is no federal or state provision affording similar subsidies to private companies faced with pollution problems. On August 24, 1970, the state legislature passed a bill providing for state guarantee of loans made to private companies for the construction of pollution abatement facilities, but that law was declared unconstitutional by the Massachusetts Supreme Judicial Court in March 1971. Legal problems appear also to stand in the way of using industrial revenue bond financing for this purpose. Because of the high cost to private companies and communities alike, the DWPC has had difficulty enforcing its standards in a few areas of the state.

The enforcement problem seems to be particularly pronounced in the case of the Blackstone Valley. In March

of 1971, Division officials described the Blackstone River and its tributaries as "one of the most polluted river systems in the state," and said the area has the poorest record in the state for taking action to solve the problem. Not only individual companies, but entire communities have resisted Division orders aimed at abating river pollution. The following few pages summarize some of the developments in this area through October of 1971.

Blackstone

On May 6, 1971, the town of Blackstone was ordered by Suffolk Superior Court to appropriate \$130,000 by September 30, for the preparation of final plans for a municipal sewerage system. The measure was defeated at town meeting by a vote of 442 to 12, and the case was turned over to the attorney general's office for prosecution of contempt of court charges. On July 13, 1971 the town of Blackstone was fined \$2,000 by the Superior Court for two contempt complaints and given until November 30, 1971 to submit final plans for a system with construction to start in March 1972.

It has been estimated that the total cost of the proposed sewer system would be \$4,660,000 if implemented in 1972, of which the town would have to pay \$3,570,000 (taking state and federal aid into account). The comprehensive plan prepared for Blackstone this year notes

"So far, the town has successfully delayed the implementation of the proposed sewerage system. This action can easily be justified in the light of immediate fiscal objectives,

but may prove unwise in the long run. Clearly, the town must eventually face the inevitable -- the capital cost of the construction of a sewerage system. If construction costs continue to rise at their present rate (above 8 percent), each year of delay costs the town in excess of \$250,000. Individual property owners are being forced to build expensive private systems, useless once public sewerage is available. The presence of a sewerage system would make the town more attractive to tax lucrative development, such as industry and apartments. Finally, environmental costs, as elusive as they may be to assess, should not be ignored by the town".* Because of the town's delay, Blackstone Potato Chip Company will now be required to install pollution abatement facilities of its own. Originally, the company was to be included in the municipal system.

Douglas

Douglas is another town which is under pressure from the state to build a sewerage system. In August of 1970 the town meeting rejected a proposed \$1.8 million project, and in March of this year the Suffolk Superior Court ordered that another meeting be held by April 16 to vote the funds. At the April meeting, a proposal covering the initial phases of the project and costing \$900,000 was again defeated.

The Court then issued an order for a third meeting on the subject, to be held by June 19. Meanwhile, town officials went to considerable effort to determine the extent to

* Comprehensive Plan for Blackstone, Massachusetts
Philip B. Herr & Associates, Boston, Mass. (1971) pp. 9-10.

which state and federal funds would be available to help finance the project. Before this issue was fully resolved, the voters on June 18 approved a \$995,800 proposal by a vote of 125 + 36. The approved system is designed to pick up seven to nine direct outfalls of sewage into the Mumford River.

On the financing issue, \$329,560 in federal and state reimbursements have already been approved for Douglas, amounting to 33 percent of the total. There is also a good chance that Douglas will be eligible for 50 percent federal reimbursement on the remainder of the project in the form of a Farmers Home Association grant.

Hayward-Schuster Woolen Mill Inc. of East Douglas is behind schedule on its own pollution abatement project. The final plans submitted by the company to the DWPC in January of this year, were reviewed and modified by the Division and approved in May with construction to start within six weeks. Douglas' new plant will at first serve only East Douglas.

Hopedale

Probably the most publicized sewer system dispute arising in the Valley was that generated by the proposal to allow the town of Hopedale to acquire the system now privately owned by the Draper Corporation. The Division insists that the system must be improved, but no federal or state funds will be available to finance the improvement so long as the system remains in private hands. The Draper Corporation, which in the past has provided service at no charge to the heavily

populated sections of the town, asserts that it cannot alone absorb the cost of the improvements required.

That cost has been estimated at \$1 to \$2 million which would force the Company to charge rates to users of from \$11 to \$22 a month. On the other hand, if the system is transferred and the town and public funds are used to finance the improvements, the monthly cost to users would be only \$4 to \$8.

In order to carry out the transfer, it was decided to file a bill in the legislature for the creation of a sewer district within the town of Hopedale. Once the district was created, the residents of the district would have had to vote on whether or not to acquire the system from Draper. This approach is an alternative to the townssewer system, which must be voted on by the entire town rather than just the district. In 1969, Hopedale voters had rejected a proposal that the town buy the system from Draper for \$374,000. Draper's intention in the latest controversy was to give the system to the district once it was created by the legislature.

Opponents of the bill argued that the issue was one on which the entire town had a right to vote, and this view apparently carried weight with the Joint Legislative Committee on Local Affairs which gave the bill an unfavorable report.

The next step will be to submit the question of the takeover to the voters of the town on March 13, 1972. The basic issue is of course who will pay for the improvements. If the town does not take over the system; the Draper Corporation will bear the initial cost, but will pass that cost on to users.

Northbridge is one of the few towns in the area with a sewer system. Almost 60 percent of the town's population is served by the public system. The remaining 40 percent of Northbridge depends on private sub-surface disposal systems. There is a sewage treatment plant in Linwood, providing primary and secondary treatment.

Despite the existence of these facilities, recently enacted water pollution standards have made it necessary for Northbridge to appropriate \$1.56 million for a five-step improvement program. Of this amount, it is expected that the town will be reimbursed by state and federal funds to the extent of \$1.17 million.

Kupfer Brothers

Probably the most outstanding example in the Valley of a conflict between a private company and the DWPC is the case of Kupfer Brothers Company, a division of Millen Industries, located in Northbridge. Kupfer is a paper coating and printing company discharging untreated waste into the Blackstone River. In July of 1967, the company was given an implementation schedule by the DWPC. Engineers were hired by the company and plans for pollution abatement were finally submitted to the Division. The Division approved the plans in September of 1969, with some reservations concerning the treatment of certain solid wastes. Construction of the pre-treatment facilities was scheduled to begin in October of 1970.

Construction did not begin as planned, and in March of this year the DWPC issued an ultimatum to the company to either begin construction of the pre-treatment facilities by May 31 for completion October 1, or notify the Division that it would stop discharging effluent into the River by September 30. The Division, receiving no reply to its ultimatum, asked the state attorney general on May 19 to seek a court order enforcing the mandate.

In July, the Suffolk Superior Court ordered Kupfer to cease discharging effluent by October 1. In response, the company announced that, rather than spend the necessary \$30,000 to \$40,000 to construct the facilities, it would close its plant. Lay-offs would begin on October 1 and continue until the plant finally closed down. This threat was modified a few days later by a spokesman for Millen Industries in New York, who said that only the departments which caused the pollution would cease operations.

As of November 15 the company has been allowed to tie in with the municipality without any pretreatment for industrial waste. However, the municipality can shut their line off if pollution levels are too high. Eventually the company plans to tie in with the municipal system for sanitary waste disposal. The Division has requested contempt proceedings for Kupfer Brothers' industrial and sanitary waste products because of the lack of pre-treatment before tying in with the municipal system.

Uxbridge

On July 19, 1968 the Suffolk Superior Court ordered the town of Uxbridge to set up a time schedule for implementation of Water Pollution Control facilities. The Court action came after the town had charged that it was unconstitutional and invalid for DWPC to issue any order to them for compliance with Water Pollution Control and also charged that they did not at present have a sewerage system and/or Water Pollution Control facility. The Court ruled that it was constitutional and valid for DWPC to force them to comply and the town did have a form of a sewerage system. The Court ordered the town to appropriate monies for acquisition of site and prepare final plans.

The town of Uxbridge was ordered on April 12, 1971 to meet the following schedule for implementation:

- by Sept. 30 - appropriate funds for site acquisition and present final plans to Division Water Pollution Control
- Oct. 31 - acquisition of site
- Nov. 30 - engage an engineer for preparation of final plans
- Dec. 30 - request eligibility status for funding

Since the town has appealed the Superior Court's decision in the State Supreme Court, no action has been taken by the town to comply with this schedule.

Conclusion

The importance of pollution abatement to this area cannot be overemphasized. There is no favorable prospect for

the Valley which does not depend in large measure on cleaning up the rivers. Just as industry already in the area has had difficulty building pollution abatement facilities without town support, new industry will be very reluctant to enter a town before it has provided sewage treatment. Availability of sewer service has always been a significant factor in industrial location, but recent federal and state pollution standards and regulations have made the existence of such facilities practically essential. Few manufacturing firms can afford to pay the cost of constructing private pollution abatement facilities, especially when their competitors are located in towns with public systems. To avoid the construction cost, those firms will seek out towns which have made better progress in pollution abatement than have any of the towns in the Blackstone Valley.

Some observers point to the departure of industry and the in-migration of population, and conclude that the future of the Valley lies in residential development. But control of water pollution is no less important to this outcome than it is to industrial development. The rivers that run through the Valley have the potential to attract suburban population, but the level of pollution is now such that they must be considered a hindrance to residential development. Furthermore, unless the towns take appropriate action, whatever new population does come in will tend to exacerbate the problem.

A third possible course for the Blackstone Valley region is said to be the development of tourist and recreational facilities. It should be obvious that this objective is out of

the question until the rivers are cleaned up. There are historic mill sites to visit, but the mills are on the rivers. There are excellent sites for campgrounds, but these too are on or near the rivers. Fishing, boating, swimming -- these are crucial to the development of the area as a recreational center, but they are all virtually impossible until the condition of the river is improved.

In the past, local abuse and neglect of the area's waterways was perhaps understandable, because no amount of local concern and activity could repair the damage already done to the river by Worcester and other northerly communities before it even reached the Northbridge line. Recently, however, this excuse for neglect has been largely removed. Worcester and its neighbors have now taken positive steps which will greatly improve the quality of the water when it reaches the southern towns. This progress in the north has shifted the responsibility for clear water to the towns located down river.

XI. RECREATION AND TOURISM

The future of the Blackstone Valley as a recreational center has been the subject of considerable discussion during the past year. Much of this discussion has been stimulated by the proposal put forth by the Massachusetts Department of Natural Resources to create a state park around the Rice City Pond area in Northbridge and Uxbridge. It is hoped that the creation of this park will generate area income and employment as tourist dollars flow in from other parts of Massachusetts and from Rhode Island. This business, combined with that generated by existing attractions, may eventually provide an important source of income and jobs for the area. However, it is not likely that this favorable outcome will result unless positive, coordinated steps are taken by the communities involved.

Furthermore, tourism can become a positive nuisance to the area unless the towns develop a way to deal with the unsightly type of development which often appears in and around important tourist attractions. More than perhaps any other business, the tourist business lends itself to careful planning on the part of local officials. If the Blackstone Valley towns neglect this planning function, however, there is a good chance that tourism will have either no effect or an adverse effect on the local economy.

The level of commercial tourism is relatively modest at present in the eight communities. The present business related to tourism centers at the following locations: Pleasant

Valley Golf Club, Pleasant Valley Motor Inn, Southwick Animal Farm, Nipmuck Pond and a few public campgrounds. In addition, non-commercial attractions exist at two state-managed areas. The Purgatory Chasm recreation area in Sutton is one of these, and the Douglas State Forest is the other. Furthermore, there may be several hundred summer cottages distributed over the eight communities.

A new state park at Rice City Pond would create an additional attraction. This park would occupy particularly beautiful land and water areas along the Blackstone River and the old Blackstone Canal. A wide variety of outdoor recreation activities may be feasible, such as canoeing, picnicking, hiking, sightseeing, wildlife observation, horseback riding, and camping.

One of the problems in capitalizing on the tourist attractions in the Valley is that most of them draw only one-day visitors. Although this factor does not necessarily decrease the jobs and income directly generated by an attraction, it does mean that the secondary demand for such facilities as motels, restaurants, and service stations is slight. In general, the greater the proportion of overnight visitors, the greater the income "multiplier" associated with any given attraction. In turn, the proportion of overnight visitors is largely a function of the nature of the attraction, rather than its quality or the amount of publicity given to it. It is a matter of common sense that people do not make two- or three-day trips to see what they can see in a one-day trip.

Therefore, for any given attraction the proportion of overnight visitors will depend on the relative scarcity of similar attractions in the area from which tourists come.

An area interested in attracting overnight visitors cannot rely on a state park for this purpose, for such a facility tends to draw primarily one-day visitors. Improved highway access, construction of restaurants and motels, promotional activities, etc. will not help either, because these measures presuppose the existence of major attractions, and are mainly of value in augmenting an already ongoing tourist trade. If an area is to become a recreational center, there must be substantial, well-planned public and private investment in attractions and facilities.

Such an investment program involves a major commitment on the part of local area citizens, especially in the planning stage. Successful tourist attractions typically use a large amount of land, as compared for example with manufacturing firms with similar levels of employment and income generation. A town planning for the introduction of such an attraction may want to create a "buffer zone" between it and the rest of the town, so that the two do not encroach upon each other, and this of course requires commitment of still more land.

There are other costs to the town besides the land cost. Traffic congestion may develop along the local roads leading to and from the attraction, and unsightly strip development may follow that traffic pattern. If the attraction

is largely seasonal, the problem of off-season work for its employees will arise.

Some of these problems can be avoided through careful planning and selection of the attraction to be located in the town. However, it is important to identify these costs, because too often the tourist business is talked about as if it were a "magic wand", capable of creating prosperity at no cost at all. Tourism is only one of a large number of industries which an area can seek to attract, and the benefits and costs of a tourist attraction must be weighed in the same calculus as the benefits and costs of having any other type of firm locate in the town.

Promotion of tourism is one of the most frequently suggested "cures" for the economic ills of depressed regions. Sometimes the suggestion is a good one, and should be taken seriously. Too often, however, planners ignore the fact that most types of tourist attractions cannot be located just anywhere. Almost every successful attraction in this country is closely tied to some natural or historical landmark of the area in which the attraction is located. Without the landmark, there can be no substantial attraction of overnight visitors. The landmark can be almost anything -- an ocean beach, a mountain, a monument, a battlefield -- but there must be something which will draw visitors from more than a few neighboring towns. In this sense, tourism is one of the least "footloose" industries imaginable. To suggest in broad terms "establishment of tourist attractions" in an area which has no distinctive natural or

historical landmarks is no more helpful than to suggest mining for copper in an area which has no copper.

There are of course exceptions to the general rule that tourism development is "landmark-oriented". In some cases it is possible to build an attraction where none existed before, for the sole purpose of attracting tourists. Probably the best example of this type of attraction is Disneyland. A more common example is a golf course (such as Pleasant Valley) which is of high enough quality to attract business from other areas. However, it is obvious that such attractions typically require very large capital investment, with little corresponding guarantee of success in drawing visitors.

The conclusions to be drawn from the preceding discussion are these:

- 1) only those attractions which draw overnight visitors are likely to generate secondary employment and income;
- 2) to draw overnight visitors, an attraction must be very distinctive; therefore almost all major tourist attractions are "landmark-oriented";
- 3) those that are not "landmark-oriented" may be costly and difficult to finance;
- 4) like any other industry, tourism involves substantial costs to the area in which it locates, as well as benefits;
- 5) these costs can only be avoided through careful planning.

On the basis of these conclusions, it is possible to analyze the potential for tourism development in the Blackstone Valley. Although it would be possible simply to list "suggestions" for attractions which would bring in overnight visitors, the list would be of no real benefit. Practically anyone who has been on a vacation away from home can tell a good tourist attraction from a poor one. The problem is much more specific: to convince people with money and knowledge about the tourist trade to invest their money and expertise in the Blackstone Valley, and to make sure that the benefits of the proposed attraction substantially outweighed its costs.

In the short term, those who are interested in the development of tourism potential in the Valley must consider the proposed Rice City Pond state park the best avenue for such development. Such a park is not likely to attract overnight visitors in sufficient numbers to generate substantial secondary employment outside the park, and the land which it occupies will of course no longer be taxable by Northbridge and Uxbridge. There will be the usual problems of traffic congestion in the area. Still, there are a number of aspects of the park which promise to make it one of the area's most valuable assets once it is completed. First, it will preserve and improve a large scenic area which is in danger of being destroyed. Second, its presence nearby will greatly encourage the restoration and development of some of the area's historic mill properties. One of the characteristics of the tourist trade is that it feeds on itself, once a successful attraction is established, development

of nearby attractions becomes more profitable. Third, the park will unquestionably make the entire area more attractive to residential development. Finally, the park will provide a needed recreation area for local residents. For these reasons, every effort should be made to accommodate the construction of the park.

Inevitably such a project creates conflicts with individual ideas as to how the land which it takes might otherwise be used. Nonessential parts of the park plan should certainly be modified if they conflict with a concrete plan to locate industry on the same land. However, the importance of the park is felt to be such that it should not be frustrated by the mere possibility of a conflict with industrial location.

APPENDIX

PERCENT OF FAMILIES WITH INCOME UNDER \$3,000

1960 CENSUS

<u>Town or Area</u>	<u>Percent Under \$3,000</u>
Blackstone	12.1%
Hopedale*	8.8
Millville	10.1
Northbridge	11.9
Sutton	15.4
Uxbridge*	10.1
Massachusetts	12.4
Worcester County	12.8
Blackstone Valley	

* Urbanized portion of town only.

OWNER OCCUPIED UNITS FOR WHICH VALUE IS TABULATED

BLACKSTONE VALLEY 1970

<u>Value</u>	<u>Units</u>	<u>Percent</u>
Less than \$ 5,000	118	2.2%
\$ 5,000 - 9,999	502	9.4
\$ 10,000 - 14,999	1,419	26.4
\$ 15,000 - 19,999	1,726	32.2
\$ 20,000 - 24,999	924	17.2
\$ 25,000 - 34,999	519	9.7
\$ 35,000 - 49,999	118	2.2
\$ 50,000 or more	40	.8

Total Owner Occupied Units 5,366

Source: U.S. Department of Commerce, 1970

RENTER OCCUPIED UNITS FOR WHICH RENT IS TABULATED

BLACKSTONE VALLEY 1970

<u>Value</u>	<u>Units</u>	<u>Percent</u>
Less than \$40	380	10.2%
\$ 40 - 59	1,231	33.2
60 - 79	1,224	33.0
80 - 99	490	13.2
100 - 119	250	6.7
120 - 149	107	2.9
150 - 199	22	.6
200 - 299	3	.1
300 or more	1	0
No cash rent	246	
Total Rental Occupied Units	3,708	
Vacant for Rent	173	

Source: U.S. Department of Commerce, 1970

OWNER OCCUPIED UNITS FOR WHICH

VALUE IS TABULATED — 1970

— Blackstone Valley
 — Worcester County
 - - - - Massachusetts

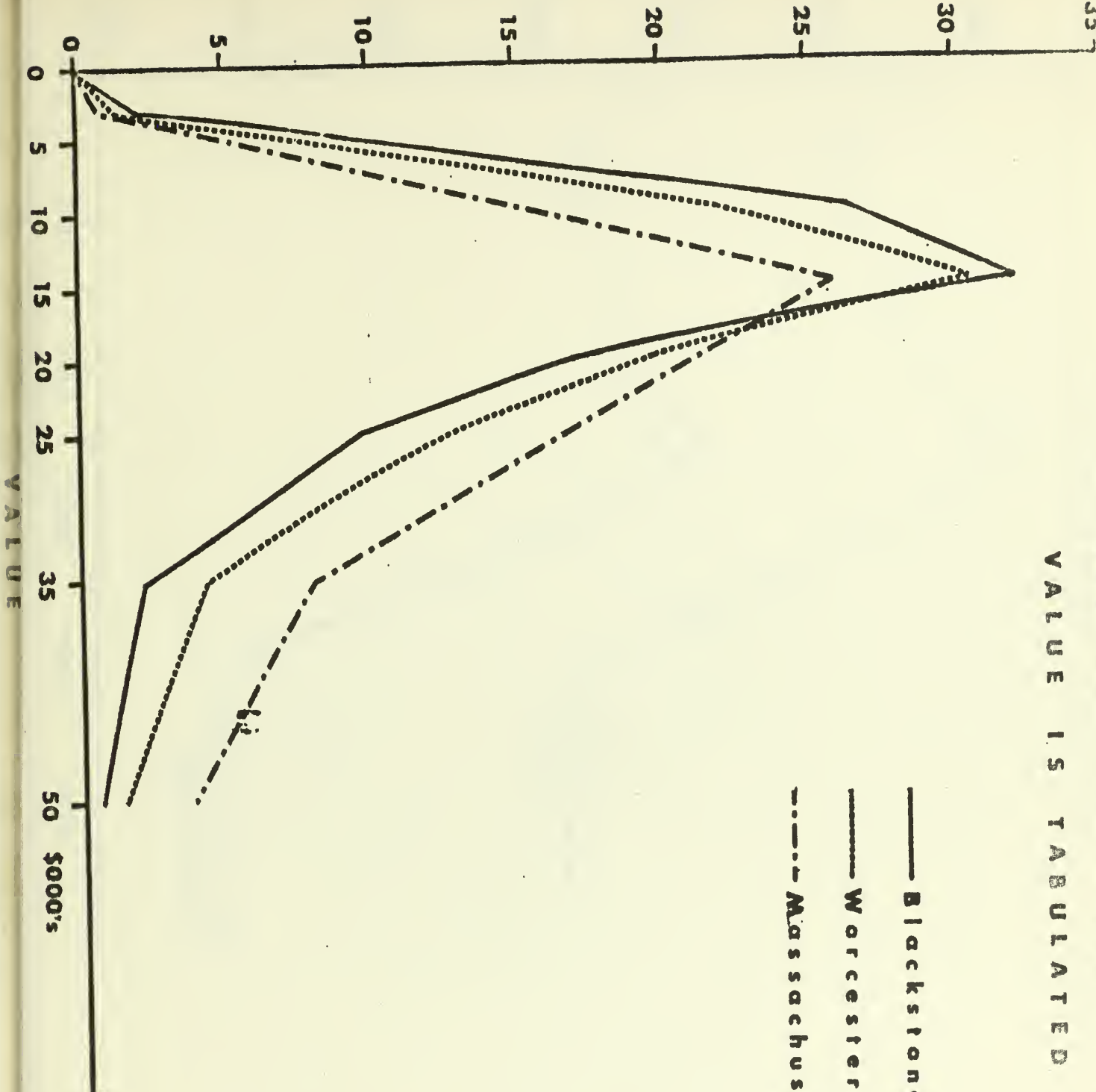


Chart 1 — COVERED EMPLOYMENT
BLACKSTONE VALLEY 1960 — 1970

